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Developments in the New York State Tuberculosis Program*

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THE behavior and control of tuberculosis, whether in the individual suffering from the disease or as a community problem, depend upon the proper control and disposal of bacilli-laden sputum. Control the sputum and spread is prevented; neglect this measure and cases multiply.

Although the tubercle bacillus is the specific cause of tuberculosis, it must be recognized that other factors contribute to both the epidemiology and pathogenesis of the disease. These contributing factors may be grouped under two headings—the constitutional and the environmental. Of these, the environmental factors are legion and appear to play a more common part in disease development than the constitutional. Recognizing the variables which may influence the disease in certain racial, industrial, and social groups, it can be stated that contact with a sputum positive case, with its opportunity for infection and reinfection by frequent and massive doses of tubercle bacilli, appears to be the most important single factor.

Keeping in mind the significance of bacilli-laden sputum, the following procedures are essential in the administration of control measures: The reporting and registration of cases of tuberculosis, active and progressive case finding, the segregation and treatment of patients suffering from the disease, domiciliary supervision of families in which tuberculosis is or has been a problem, rehabilitation of cases, the follow-up of all cases and contacts, and financial assistance to needy families in a manner free from the stigma of pauperism. Equally important is the periodic appraisal and evaluation of procedures and services, both from the viewpoint of administrative economy and the more effective extension of our knowledge of the epidemiology and pathogenesis of the disease.

From its beginning in 1913 when the Tuberculosis Division of the New York State Department of Health was estab-

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lished, the growth and development of the program for the control of tuberculosis has been constant and progressive. At that time, reporting of cases and provision of sufficient hospital beds were the two factors of major importance, and the promotion of these were the two major activities of the division.

Since 1917, counties having more than 35,000 population have been required by law to maintain a tuberculosis hospital. As a result, 31 counties and 2 cities constructed sanatoria, and at the present time the beds in these hospitals, plus the beds in the 4 state tuberculosis hospitals, provide a ratio of 2.4 public beds for every death from tuberculosis. Including all other beds available in public and private institutions this ratio is 3.8.

The importance of having a roster of all known living cases of tuberculosis is too obvious to require discussion. In order that better local control and supervision of that problem could be effected, each of 20 state health districts maintains its own district roster, properly indexed and filed, whereby the size of the problem can be gauged and individual supervision provided. All reports are forwarded to the central office.

Coincidental with these developments came the gradual change from specialized tuberculosis field nursing service to a generalized nursing program in which tuberculosis assumed its proper relationship. Supervision and guidance of this nursing service, which is on a local basis, are provided through supervising nurses of the district health offices, the consultation nurses of the state tuberculosis hospitals, and the assistant directors of the Public Health Nursing Division of the central office.

As these state-wide activities were being developed and enlarged, the division undertook another activity of major importance—case finding. This led to the establishment of an itinerant diagnostic chest clinic service on a strictly consultation basis in coöperation with the practising physicians. This provided a service to the rural areas where it was lacking. It required some time at the beginning to gain the good will and coöperation of the private physician, but soon this service became very popular with both physicians and patients.

As a result of the recommendations of the Governor's Health Commission appointed in 1930, 3 new state tuberculosis hospitals were constructed to serve 3 groups of small counties, and a new 100 bed infirmary building is nearing completion at the State Hospital for Incipient Tuberculosis at Ray Brook. The Ray Brook Hospital, established in 1904, was for the admission of patients with incipient or minimal tuberculosis from the entire state, but this new addition at the hospital will also serve as a district hospital for that area the same as the 3 new hospitals. The 4 areas serve 31 counties.

With the establishment of these new hospitals, the field clinics hitherto conducted by the staff of the central office were discontinued, that function, intensified and extended, being taken over by the hospitals.

In translating the above into administrative practice in New York State, the responsibility for the program is placed in the Division of Tuberculosis. There are 57 counties in upstate New York with an estimated total population of 6,080,444. These counties vary in population from 3,929 to 813,786. The death rate from tuberculosis for upstate New York has dropped from 161.5 per 100,000 in 1900 to 44.7 in 1938. Reference is made to Exhibit A.

The purposes of the division may be considered as threefold: (1) direct service to the people examined and studied, their families, and communi-

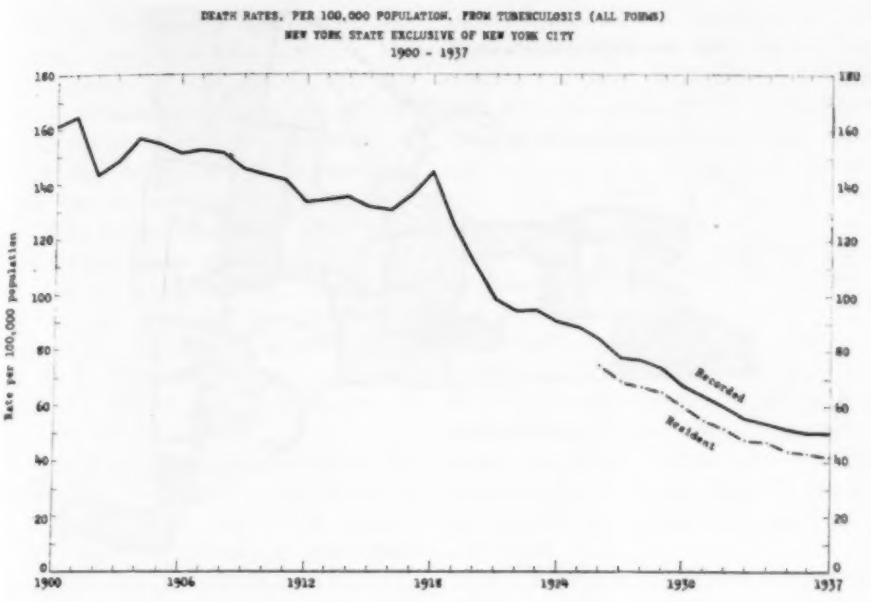


Exhibit A

ties; (2) research through the acquisition of data, its classification and interpretation; and (3) education of the public and the medical profession. Knowledge of the scope and extent of the disease problem in a community is as essential to the health officer as the extent and character of a lesion in an individual patient is to a clinician. Such knowledge may be acquired from detailed morbidity and mortality data.

By complete checking of detailed information on death certificates regarding residence, etc., and prompt and complete reporting of existing cases, the health officer is able actually to take stock and be guided wisely in his administrative program. To provide such opportunities, the reporting of tuberculosis cases is constantly being promoted by both the district offices and the division staff. Consequently, the tuberculosis report cards are routed, except for our largest cities and county health district areas, through the office of the district state health officer. Each district officer maintains a case register for all reported cases residing in his district. The name, address, sex, age, clinical stage, and sputum status are all catalogued by the use of colored flags in a visible index file for ready reference in follow-up, public health nursing supervision, and all forms of community assistance toward control. Current data relating to the patient are secured from clinics, tuberculosis hospitals, and private physicians, from which each district officer is able to make periodic appraisals of the tuberculosis problem either in his entire district or in any of the counties within the district.

Time does not permit a detailed review of the many other advantages of having this information readily and constantly available. Obviously, the district officer is thereby enabled to direct more intelligently the field activities in tuberculosis control, to use the data in promoting advances in case-finding methods, to secure additional clinic sessions, and to employ the necessary number of public health nurses. Such data are most essential in direct-

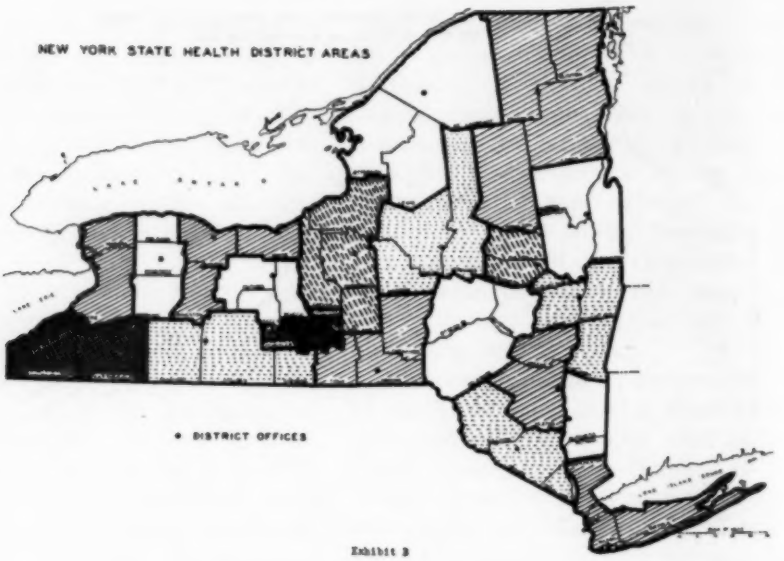


Exhibit B

ing the local public health nursing service along the most productive channels. Exhibit B shows the state health district areas.

The case finding activities in upstate New York are closely integrated in practically all localities with the 31 local tuberculosis hospitals and sanatoria. All the county tuberculosis hospitals conduct a case finding service as an activity of their out-patient departments. Except in one or two counties in which the total area of the county is very small, each of the hospitals conducts itinerant clinics in various sections of the respective counties. Emphasis is placed upon the examination of contacts and patients who may be

Exhibit C

referred by their family physicians because of symptoms referable to the chest. There are altogether approximately 120 semi-permanent or permanent clinics or dispensaries, in addition to a similar service which is available for the people periodically through the above itinerant service. The total number of examinations conducted in these local clinics approximated 55,000 in 1937. The total number of annual clinic examinations throughout upstate New York is between 90,000 and 100,000. Exhibit C shows the distribution of diagnostic clinic service.

The total number of special beds for tuberculosis in upstate New York is 10,326 as compared with 2,716 deaths. Of these beds, 5,537 are in state and local tuberculosis hospitals and the balance in private hospitals or other state institutions. The ratio of total beds to deaths is 3.8 and the ratio of special public beds to resident deaths is 2.4. Exhibit D shows the geographic distribution of public tuberculosis hospitals.

In 1930, the State Health Commission, following an intimate study of the tuberculosis control problem in New York State, recommended that the state construct 3 new tuberculosis hospitals and add an infirmary to Ray Brook, the one state tuberculosis hospital then existing, in order to provide hospital and other control facilities not then available in 25 counties.

Each of these hospitals has been constructed in the population center of the area served. Each acts as the hub of the wheel of tuberculosis control. A continuity of medical service from case finding through treatment and follow-up of both patient and family prevails in each hospital. Tuberculosis is approached on a family and community basis, while the patient is treated as an individual.

The fact that practically 100 per cent of the general practitioners participate and coöperate by having their patients examined and studied by the hospital staffs, has contributed more to the success of these hospital programs than any other single factor.

Each state hospital conducts an active consultation type of out-patient service within the hospital and through

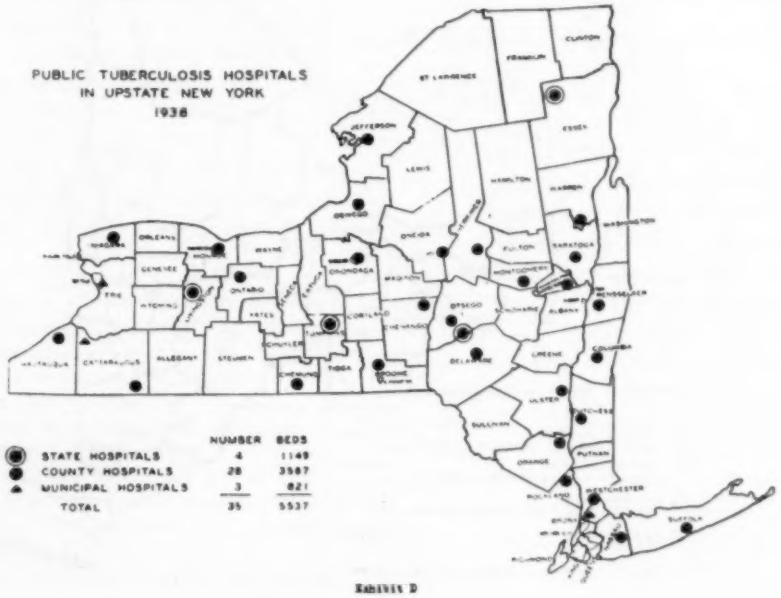


Exhibit D

clinics held throughout each county in the area. Patients are admitted to the clinics by a request card signed either by their family physician or the local health officer. All patients are referred back to their physicians for a report of the examination, which is completed in detail and mailed to the referring physician. Copies of these reports are sent to the district state health officer and the local public health nurse for assistance in follow-up work.

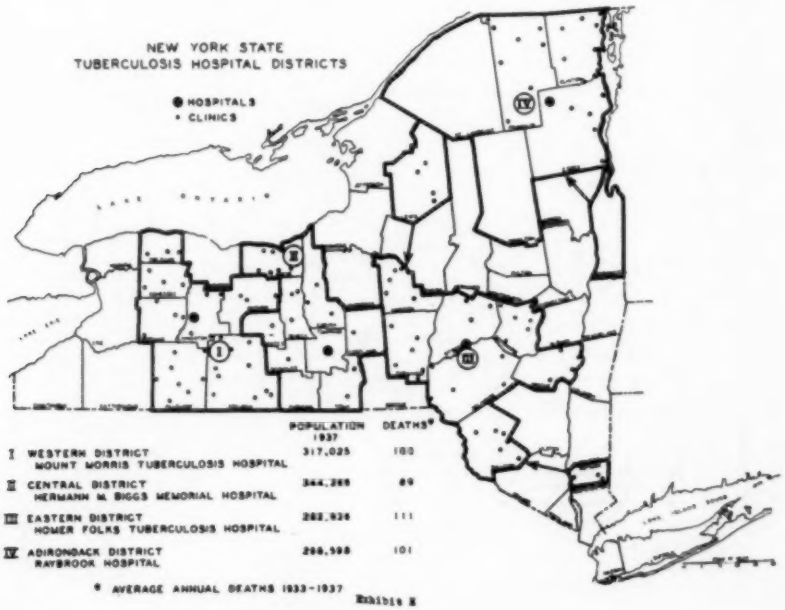
In this clinic service, emphasis is placed upon the history of contact with a known case of tuberculosis. Patients who have experienced such contact, as well as patients who are referred by their family physicians because of suspicious symptoms or physical signs, comprise the patient attendance.

These hospitals have been in operation for approximately 3 years, and during the past 2 full years of clinic administration a total of 21,804 individuals, comprising 1.8 per cent of the total hospital area's population have been examined. The yield in newly discovered cases of tuberculosis among these patients was 3.1 per cent. About 50 per cent of the patients were examined because of history of contact. Of real significance is the fact that of those patients found with tuberculosis because of the history of contact, 67 per cent were in the minimal stage of their disease, in contrast to 40 per cent of those who presented themselves to the clinic because of symptoms. Exhibit E shows the outline of these tuberculosis hospital areas.

Patients are admitted to the hospitals for special study or treatment either by applying through their family physician, health officer, or directly to the superintendent of the hospital.

Each hospital maintains a more detailed case register for its district than that of the district state health officer. All families in which tuberculosis may be a problem are indexed in detail as to their status regarding infection, chest X-ray, contact with sputum positive case, clinical status, and other social and epidemiological data.

Complete medical and surgical facilities are available in each hospital. All



		POPULATION 1937	DEATHS*
I	WESTERN DISTRICT MOUNT MORRIS TUBERCULOSIS HOSPITAL	317,025	100
II	CENTRAL DISTRICT HERMANN M. BIGGS MEMORIAL HOSPITAL	344,288	89
III	EASTERN DISTRICT HOMER FOLKS TUBERCULOSIS HOSPITAL	282,936	111
IV	ADIRONDACK DISTRICT RAYBROOK HOSPITAL	298,598	101

* AVERAGE ANNUAL DEATHS 1933-1937

Exhibit E

nurses are registered, and all physicians are employed full time. One full-time thoracic surgeon has been performing the major operations during alternate visits to the 3 new hospitals, although each hospital has a resident surgeon. The surgical program in Ray Brook will be started on July 1, with the employment of an additional thoracic surgeon.

The care and treatment of orthopedic patients are directed by the physicians in our Division of Orthopedics by periodic visits to each hospital.

Research and teaching characterize all phases of the program in each hospital. For many years, medical students have had the benefit of residence teaching at Ray Brook, and this service, together with teaching programs through affiliation with schools of nursing, is continually carried on in the 3 new hospitals.

Although the laboratory in each hospital conducts all routine examinations, each one is carrying on studies in different fields of research—in one, bacteriology; in a second, physiology of respiration; in a third, special studies relating to the tissue reaction to the tubercle bacillus, and in the fourth, pathology. In this manner, duplication of work is avoided and the special resources of any one laboratory are available to all the hospitals.

Among the special studies relative to the epidemiology and pathogenesis of tuberculosis which are being carried on are:

1. X-raying of workers in heavy industries and dusty trades (8,500 already completed)
2. Periodic tuberculin testing and X-raying of students in 9 state teachers' colleges (6,000 examined to date)
3. X-raying of patients and employees in mental hygiene hospitals, where the tuberculosis death rate approaches 812 per 100,000
4. Continuing and periodic examination and reëxamination of 2,300 inmates of a school for feebleminded
5. Similar tuberculin testing and X-ray study of 500 inmates of a state institution for delinquent girls
6. X-raying of 5,000 adult admissions to general hospitals
7. X-raying of 1,500 employees in a food production plant
8. Continuing detailed studies of the economic factors in tuberculous families, in relation to the individual, the family, and the community.

In addition to the above, other special studies—either as a part of routine administrative procedures or as special projects—are being conducted regarding such detailed aspects of the control problem as: Circumstances influencing the reporting of tuberculosis cases by private physicians; the longevity of tuberculosis patients following the onset of symptoms or the diagnosis; the relative value of the various methods of treatment, including collapse therapy; the appraisal of various routine administrative methods used in clinics, dispensaries, and tuberculosis hospitals; the determination of significant and helpful factors favoring the rehabilitation of patients and their reëstablishment as self-sustaining persons in the community.

SUMMARY

To spread tuberculosis a human being must have an open lesion. The epidemiology and the study of the control of tuberculosis present a more complex problem than almost any other of the communicable diseases for which the cause is known. The transmission of infection occurs most frequently among persons in intimate contact with the patient who has the disease. Of all persons who become infected with the tubercle bacillus, only a small percentage develop the reinfection type of tuberculosis. Pulmonary tuberculosis is a disease primarily of adults. Environmental factors seem to have a more common influence on the development of disease than do the constitutional factors. The most common en-

vironmental denominator found in the tuberculosis problem is the almighty dollar. A vicious circle is formed by poverty and tuberculosis and tuberculosis and poverty. Before many specific factors can be individually evaluated, more information must be obtained. If, however, our present knowledge could be applied to our present and future medical and public health practices, the mass behavior of tuberculosis would be changed. The tremendous amount of needless suffering, the unnecessary deaths, and the enormous economic losses resulting from the disease can be appreciably reduced. They should be.

From the foregoing, it is evident that the tuberculosis control program of the New York State Department of Health embraces all of the accepted procedures. Facilities for administrative control are universally available throughout every section of the state.

Athletics for Girls

THE American Public Health Association was represented at the 16th annual meeting of the Women's Division of the National Amateur Athletic Federation in San Francisco in May by Pauline Brooks Williamson, Chief of the School Health Bureau of the Metropolitan Life Insurance Company.

The National Amateur Athletic Federation is an affiliated organization of the American Association for Health, Physical Education and Recreation.

In her report to the Executive Board, Miss Williamson points out that the National Amateur Athletic Federation has throughout its history encouraged the democratic principle of a sport or game for every girl and not for just the few who excel. The Federation believes that every girl should be given an opportunity to participate in sports according to her needs as revealed through a thorough medical examination and by her interests and ability. Competition that stresses enjoyment of sport and the development of good sportsmanship is emphasized rather than those types that aim at the making and breaking of records, the winning of championships for the enjoyment of spectators, or the athletic reputation or commercial advantage of institutions and organizations.

Occurrence, Pathological Aspects, and Treatment of Fluoride Waters*

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ADEQUATE proof that minute amounts of fluorine as fluorides in drinking water produce an imperfect enamel structure in the teeth during the formative period of the enamel has created a serious problem in water supply, not only throughout the nation, but throughout the world in general. Furthermore, the action of fluorine may not be confined to the teeth, but may have pathological effects upon other parts of the body structure. On the other hand, no proof has been brought forward to show that it is altogether a useless or harmful element rather than an element active and needed in minute quantities such as is the element of copper. That body well-being can be maintained on extremely minute quantities of fluorine as it can be on minute quantities of the essential element iodine is found in the fact that many waters contain only very small quantities of fluorine yet cause no outstanding apparent defects in body metabolism. Few waters can be found that do not show as much as 50 micrograms of fluorine per liter, which is the approximate amount of iodine required daily to prevent simple goiter.

The problem, without doubt, is to provide drinking water which contains a minimum amount of fluoride, since mottled enamel, which is produced at levels of at least 1 p.p.m. and above, is certainly evidence of definite ab-

TABLE I

Showing Relation of Fluoride to Incidence of Mottled Enamel in Children

City and State	*Fluoride Content in p.p.m.*	*Composite of 9, 10, and 11 Year Old Children*	
		Number of Children Examined	*Incidence per 100 Children*
Junction City, Kans.	0.7	115	1.7
East Moline, Ill.	1.5	110	24.5
Webster City, Iowa	1.6	72	26.4
Clovis, N. M.	2.2	138	71.0
Plainview, Tex.	2.9	77	87.0
Amarillo, Tex.	3.9	229	89.5
Conway, S. C.	4.0	59	88.1
Lubbock, Tex.	4.4	164	97.6

* Read before the Public Health Engineering Section of the American Public Health Association at the Sixty-seventh Annual Meeting in Kansas City, Mo., October 27, 1938.

FIGURE I—Distribution of mottled enamel in the United States up to 1938

normal physiology, as proved by Dean, Dixon, and Cohen.[1]

In Table I, taken from report by Dean and Elvove,[27] are shown data for the incidence of mottled enamel in children correlated with the fluoride content of waters from widely separated cities in the United States. Such a correlation as shown is rather conclusive evidence that fluorides alone are responsible for the mottled enamel since the mineral content of these waters and the diets of the children examined from so many divergent localities are bound to be different.

Water supplies low in fluorides must be obtained either by the selection of a suitable water free from excessive amounts of fluorides or treatment of unsuitable supplies to reduce the fluoride to the "safe" level. Waters known to contain excessive amounts of fluorides are widespread throughout the United States and evidence is fast accumulating that such waters are found widely distributed throughout the world. In Figure I is shown the distribution of areas known to have mottled enamel and in most cases the waters are known to contain excessive fluorides. The question naturally arises: From what stratum or source do these fluoride waters arise? McKay in 1918 [2] pointed out that the inhabitants of many endemic areas used artesian water. He also pointed out that the artesian waters of the great plains were obtained from the Dakota sandstone and that the original source of this water was the east side of the Rocky Mountain watershed. In general fluoride waters are derived from wells but not necessarily from sandstone. In Ohio [3] many of the fluoride waters appear to rise in the limestone. In the Colorado Springs area the surface water from Pike's Peak watershed seems to be the source of the fluoride, and such water entering the western outcrops of the Dakota sandstone and underlying sedimentary formations at the Rocky Mountains may furnish the

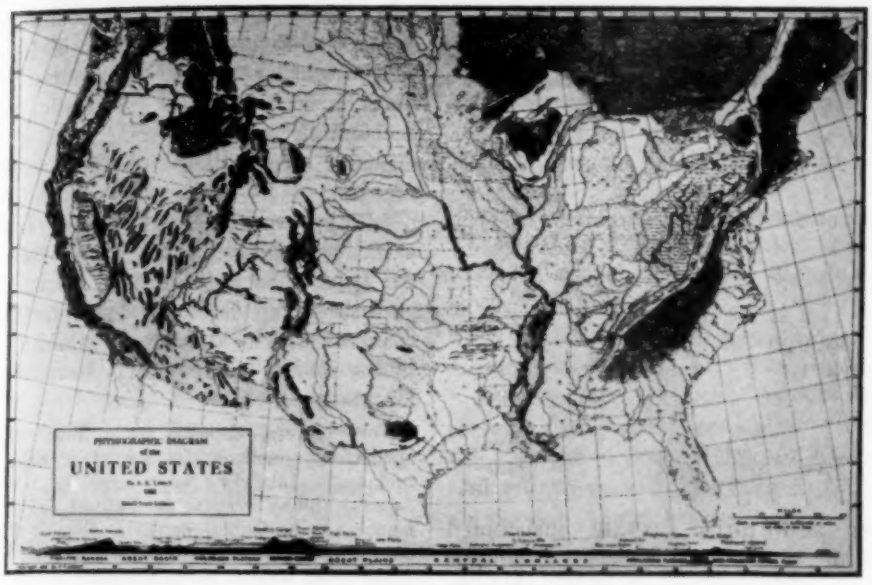


FIGURE II—Areas of igneous rocks (dark) with possible relationship to entrance of percolating fluoride waters

fluorides in many places in the western plains, including the large endemic area of northwestern Texas.

In Figure II a relief map of the United States shows the general geologic conditions. Note the Piedmont areas adjacent to the igneous protrusions into which drainage water from igneous formation percolates. The presence of mottled enamel in areas adjacent to Mt. Vesuvius in Italy appears to have been associated with waters which had their origin on the laval surfaces of that volcano. In gases from volcanoes and fumaroles fluorine compounds [5] have been found. Geologic data bearing on the probability of procuring fluoride-free ground water would provide assurance to the municipality that a given well development would probably be successful. That such data ever will permit of definite interpretation is by no means certain since fluoride compounds are very widely distributed in many types of rock formation.

Since fluorine is a very reactive element it is seldom found free in nature. Calcium fluoride, fluorite, CaF_2 and cryolite the double salt of sodium and aluminum with fluorine are two of the naturally occurring minerals which contain large quantities of fluorine. The origin of all fluorine bearing minerals is of course the igneous rocks underlying all sedimentary formations. Recorded analyses of several thousand igneous rock structures as compiled by Washington [6] and which give results for fluorine in about two hundred analyses, show this element to be present in about 85 per cent of the igneous rocks tested. The amount of fluorine contained in these rocks varied from 0.01 to 3.36 per cent, with an over-all average of 0.23 per cent.

In Table II are given results showing that there were only 40 rocks of the 172 that contained more than the average amount of fluorine and that of these there were only 8 which contained the element in amounts above 1.0 per cent. Fluorine was found in not only many different kinds of rocks but it

TABLE II

Showing Distribution of Fluorine Content as Found by Analyses of 172 Igneous Rocks from Different Parts of the World

Content of F. Per cent Incl.	*Number of Different Rock Specimens Showing F.*	*Per cent of Total Numbers of Rocks Showing F.*
0.01 to 0.05	57	33.2
0.06 to 0.09	35	20.3
0.1 to 0.23	40	23.3
0.24 to 0.50	19	11.0
0.51 to 1.00	13	7.6
1.01 to 3.36	8	4.6
Above 3.36	None	
Total	172	100.0

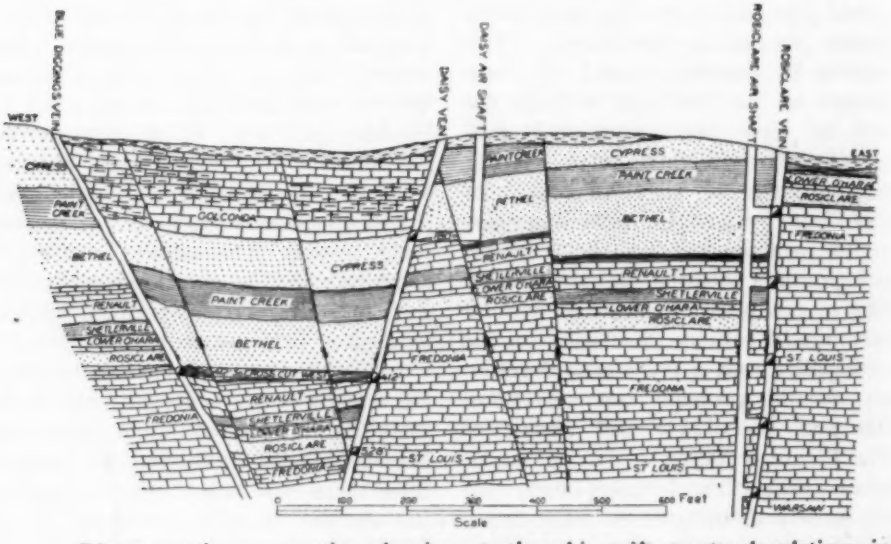
was also rather evenly distributed among the various classes of igneous rocks. The occurrence of fluorides in sedimentary formations seems to be still more erratic than that in primitive rocks.

A study of the fluorspar deposits of southeastern Illinois and northwestern Kentucky shows that these were laid down along fault and fissure lines as shown in Figure III, which is taken from work by Bastin.[7] Note that the fluoride is laid down vertically and horizontally as a vein mineral in these deposits. According to Fohs[8] these deposits of fluorspar were depositions resulting from thermal waters laden with fluorides or fluorsilicates arising in the igneous rock formations, ascending and spreading laterally through these fissures which developed along the faults in the sedimentary formations. He states:

> These several deposits occur both filling open cavities and as replacement of adjacent rock . . . Likewise they occur in tabular deposits, filling vertical or inclined faults or fissures, as horizontal deposits along bedding planes, faults or replacing bedded strata and filling stock works: hence irregular in outline.

There is in these findings an indication that faults and fissures which extend upward from primary rock strata are important geologic signs of fluoride bearing waters. Near the location of the fluoride water area in northeastern

FIGURE III—Faults and fissures in sedimentary formations permitting thermal magmatic fluoride bearing waters to ascend and spread laterally (*Drawing from Bastin*)



Diagrammatic cross-section showing stratigraphic and structural relations in the vicinity of Rosiclare.

Wisconsin are known to exist faults, and their proximity suggests a possible cause for these few fluoride waters of that state. A similar condition exists in the fluoride area between Moline and Peoria, Ill. The derivation of fluorspar deposits suggests also that no particular limestone strata can be held responsible for fluoride waters but that any of the sedimentary formations could be interspersed with fluoride deposits. It appears, however, that replacement deposits as well as deposits filling cavities are more likely to occur in limestone formations since these are known to be subject to channel formations which are favorable to depositions as well as re-solution.

Sundstrom and McKee [10] show by means of well packers that fluoride in amounts of about 2.0 p.p.m. is present in both limestone and sandstone water from a well drilled 916 feet to granite in Wisconsin's fluoride area.

Fluorapatite, $Ca_5(PO_4)_3F$, is another mineral which may be responsible for the presence of fluorides in natural waters, as it is a rather common constituent of all classes of rocks—igneous, metamorphic, and sedimentary, and forms the source of fluorine in the phosphate rock deposits of Florida, Tennessee, Virginia, Idaho, and Montana. The fluorine content of these materials varies from practically zero to 4 per cent, and the presence of this element in these products, which are used both for fertilizer, as a supplementary mineral in stock feeding, and as a source of phosphate in baking powders, has occasioned much experimentation on the physiological effect of fluorine on both animal and plant life.

PATHOLOGICAL ASPECTS OF FLUORIDES

De Eds [11] and McClure [12] have recently made excellent reviews of the subjects up to 1933. Of the vast amount of material avaliable in this literature of nearly 150 articles, only a few outstanding points can be given here. Fluorine as fluorsilicates, sodium fluoride, rock phosphate, and calcium fluoride show toxicity to the animal body in the order given and in comparatively small amounts. Leake in 1928 [13] showed 87.5 mg. of sodium fluoride per kg. when given intravenously to be fatal for rabbits in about 40 minutes. Many cases of fluoride poisoning of humans are to be found in the literature and as little as 4 gm. has proved fatal when taken by stomach.

The chronic poisoning by fluorides is an entirely different matter. Here the changes in body tissue are gradual and adjustments to the fluoride intoxication are made so that pathological evidence of toxicity is difficult to gather. Interpretation of animal toxicity experimentation in terms of human reaction is frequently difficult. It is a well known fact that the dose of certain drugs for dogs is 15 times as much as for man on an equivalent weight basis. Differences in life span and age at chemical maturity as well as species tolerances of adverse environment need be given their proper value when transposition of experimental results are made. Thus, Smith, Lantz, and Smith [14] noted in their preliminary experiments on St. David water (F. from 4.2 to 7.1 p.p.m.) that "No destructive effect of the St. David water on the teeth of the rats was noticed when the diet was adequate in all respects." However, when rats were given this same water concentrated by evaporation to 10 times the original mineral content (F. 42 to 71 p.p.m.) gross defects (mottled enamel) occurred in the teeth within 1 month's time. While on the other hand, children using the unconcentrated St. David water developed mottled enamel practically 100 per cent. Such a result is explained on the basis of the rapidity of growth of the tooth structure of the rat as compared to humans.

Evidence has also been obtained that

the fluoride in some tissue may be present as an immobilization phenomenon since analyses have shown it to be present in all tissues. In muscle it is found present from 0.4 to 4.6 p.p.m.; from 1,180 to 1,800 p.p.m. in dental enamel, with a value of 700 p.p.m. for bone calculated to a dry basis. Normal results for fluorine in tissue is difficult to ascertain since all foodstuffs have been found to contain fluorine in varying amounts depending upon the locality of production. Analyses show an average of over 5 p.p.m. for fluoride in 32 edible food substances and 26.5 p.p.m. for 63 plant products with more fluoride in leaves than in stems and in skin of fruit than in pulp.[12]

Phillips, Hart, and Bohstedt [15] found that an intake of 2 to 3 mg. per kg. of body weight per day (1.5 gm. of fluoride per cow) was the upper limit of tolerance for dairy cows. Even at this level toxic changes are manifest in the teeth and bones as seen from photographs by these authors. The fluorine content of the bones and teeth of these same dairy cows as reported by Chang, Phillips, Hart, and Bohstedt [16] showed a great increase (10 to 20 times, depending upon the amount of fluoride fed), but liver, muscle, hair, and hoof remained practically unchanged. The thyroid glands, however, increased in fluorine content from 125 to 240 times the normal. Data by Evans and Phillips [17] just published (1938) show fluoride content of the thyroid gland in hyperthyroidism to vary from 1.5 to 95 p.p.m. and all those containing more than 20 p.p.m. of this element were associated with a high basal metabolic rate, with one exception.

Sharpless and McCollum [18] in answer to the question, "Is fluorine an indispensable element in the diet?" state in part that: "No difference could be noted between these and the control rats which were fed fluorine" (an amount equivalent to that taken on a normal diet). "The rats on the low fluorine diet looked very well, were quite fat, and on the whole appeared normal." The teeth of these low fluorine rats were free of fluorine as far as could be determined, yet showed no gross deficiency or defect. From the description of the diet and methods of analyses used by these authors their low fluorine diet contained less than 1.0 p.p.m. F.

Ellis and Maynard [19] used rats and fed sodium fluoride or bone meal equivalent in fluorine content to the extent of from 8 to 14 p.p.m. in a diet which contained 3.0 p.p.m. fluorine. They noted deposition of fluorine in bones and teeth with a lightening of the enamel in the teeth of those fed the diet plus added fluorine. No lightening occurred in those eating basal diet with 3.0 p.p.m. fluorine.

While no definite knowledge is yet available to show that fluorine is necessary for body function, there is much definite evidence that it is a toxic poison whose intake should be reduced to the lowest limit possible. Mention should be made of the recent finding of Dean,[20] however, that the dental caries attack rate is only about one-half as great in those children using fluoride waters and having mottled enamel as in children using water low in fluorides.

THE TREATMENT OF FLUORIDE WATERS

In those geographic areas in which excessive amounts of fluorides (1.0 p.p.m.) are present in the water supply the authority has three courses of action from which a choice need be made. (1) Remove the fluoride from the supply then in use. (2) Sink other wells in a different locality or stratum as advised by a competent geologist with the hope of procuring a safe and satisfactory supply low in fluorides. (3) Develop any available surface water supply which is found to be low in fluoride, adequate in quantity, and

capable of treatment by ordinary purification procedures so that a safe and suitable water may be obtained.

In many areas removal of fluoride seems to be the only method available since no surface supplies are obtainable and all ground waters show fluorides. Such a situation is reported to be present in the Texas "Panhandle" fluoride area which, according to Dean, Dixon, and Cohen,[1] constitutes the largest mottled-enamel area in the United States. Laboratory and semi-plant scale experimentation on the removal of fluorides followed rather slowly the discovery that fluorides in amounts above 1.0 p.p.m. was the cause of mottled enamel in teeth. Boruff [21] published the first results on removal and came to the conclusion that treatment of water with alum (10 gr. per gal.) would reduce the artificially prepared sodium fluoride waters from 5.0 p.p.m. to less than 1.0 p.p.m. Activated alumina was found efficient in reducing the fluoride content from 5.0 p.p.m. down to from 0.5 to 2.3 p.p.m., depending upon the rate of filtration and quantity of water treated. He also reported a 60 per cent reduction by lime softening.

Swope and Hess [22] carried out tests with Defluorite (activated alumina at that time) on Chetopa, Kans., water with a resulting reduction in fluoride content from 6.2 to less than 1.0 p.p.m., but such a process, to the author's knowledge, has not been employed by any municipality.

Scott, Kimberly, Van Horn, Ey, and Waring [3] have found that fluorides may be removed by lime treatment at high pH values provided the water contains sufficient magnesium. Such treatment to be effective required removal of 91 p.p.m. magnesium in order to reduce the fluoride from 3.0 to 1.0 p.p.m., the safe level.

Elvove [23] has reported that fluorides can be removed from water with the aid of tricalcium phosphate, magnesium oxide, or magnesium hydroxide, but states that the question of cost must be solved before it can be applied on a practical basis. MacIntire and Hammond [24] and Adler, Klein, and Lindsay [25] nearly simultaneously, have published experiments on fluoride removal by means of tricalcium phosphate with similar success but the latter authors appear to have pointed to a rather practical means of application of the treatment, that is, by using it as a filtering material. It is of interest to note that these authors prepared their chemical from commercial phosphoric acid of high purity and milk of lime of such proportions that a mixture of hydroxy apatite $3Ca_3P_2O_8Ca(OH)_2$ and tricalcium phosphate $Ca_3P_2O_8H_2O$ results and constitutes the material now sold as Defluorite.

Regeneration of the bed with 1 per cent sodium hydroxide followed by washing, neutralization of residual alkali with dilute HCl and subsequent washing was practised but about 3.0 per cent of bed was lost per regeneration. They found this chemical to have more than twice the capacity of activated alumina used by Swope and Hess or 1.8 gm. of fluoride per kg. of filter bed. The initial cost of this removal material, the fact that 3 per cent of the bed was lost with each regeneration, besides the cost of chemicals for regeneration, have militated against any notable installations of the process.

Recently, Behrman and Gustafson [26] have improved the method of regeneration of Adler, Klein, and Lindsay [25] by the use of carbon dioxide in place of hydrochloric acid for the neutralization of residual alkali and have shown that the filter bed of chemical can be used indefinitely without any loss of filtering material. Moreover, it is possible to employ ordinary materials of construction and equipment when carbon dioxide is the neutralizing agent. The improve-

ment is covered by a patent application. Since only a very small fraction of a water supply is used for drinking and cooking, individual household units have been proposed which will treat a stated quantity of water of certain fluoride content, but if these are not controlled, a false sense of security will prevail at times when the capacity of the unit is spent.

Experimental work done in this laboratory with softening a water containing a total hardness of 240 p.p.m. with a fluoride content of 2.8 p.p.m. reduced the fluorides to 1.3 p.p.m. This water when treated with 10 grains of alum per gallon and filtered shows 50 per cent removal of fluorides. Neither ferric hydroxide nor hydrated manganese dioxide had any sorptive effect upon the fluorides.

Many phases of the fluoride problem are still unsolved and with the results of extended experimentation into the physiological effects of minute amounts of fluorides may come a demand upon both the chemist and geologist for fluorides lower than the present permissible limit of 1.0 p.p.m.

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Morbidity and Mortality From Scarlet Fever in the Negro

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SCARLET fever is one of the communicable diseases which have been said to be less prevalent in the Negro than the white population. Ever since the census of 1879,[1] when for the first time comparative statistical data over any extensive area showed a ratio of 69.2 deaths from scarlet fever in the Negro to 1 in the white as compared with the ratio of 6.3 to 1 for deaths from all causes, various observers have commented on this difference. However, most of these investigators have based their statements on the recorded mortality rates for the southern states published annually by the Bureau of the Census. These differences for scarlet fever are well shown in Table I.[2]

No one has made a comparison of the scarlet fever experience of the Negro population in the South with that of the North, nor has this been contrasted with that of the white population in these two regions. In order to study this problem, questionnaires requesting the number of deaths and cases for certain age groups for each year from 1930 through 1934 were sent to the health officers of 13 southern states, 10 northern cities with large Negro populations, and 10 southern cities. Because the Bureau of the Census has not published estimates of population according to race since 1933, rates were only computed for the 4 year period, 1930–1933. There are still several cities and states which do not compile their cases or deaths from scarlet fever according to age or race, and therefore in one or two instances, the interpretation of the data must necessarily be limited.

The data in Table II show the mortality rate from scarlet fever for both races in certain states and cities. For both races the death rates in the southern states and cities are lower than in the northern communities. In practically all instances, the colored mor-

TABLE I

Mortality Rates from Scarlet Fever Among Colored and White of 10 Southern States, 1920–1933

	Scarlet Fever	
	Colored	*White*
1920	0.54	2.09
1921	0.57	2.12
1922	0.42	1.97
1923	0.51	1.78
1924	0.36	1.47
1925	0.38	1.39
1926	0.45	1.56
1927	0.30	1.56
1928	0.42	1.45
1929	0.37	2.27
1930	0.44	1.81
1931	0.36	2.17
1932	0.29	1.60
1933	0.47	1.99

tality is also lower than the white, but this difference is greatest in the southern states, where the ratio of Negro to white deaths is 3.7 to 1; less marked in the southern cities, 2.4 to 1, and least in the northern cities where the ratio is 1.8 to 1.

TABLE II

Mean Mortality Rates from Scarlet Fever for All Ages of White and Negro Population in Certain States and Cities, 1930–1933, inclusive

	Mean Mortality Rates per 100,000 Population for 4 Year Period, 1930–1933	
	White	*Colored*
Southern Cities:		
Atlanta	3.9	1.6
Baltimore	2.6	1.2
Birmingham	1.8	0.3
Louisville	2.8	0.5
Memphis	2.3	...
Nashville	1.9	...
New Orleans	1.2	0.7
Norfolk	0.3	1.7
Richmond	0.8	1.4
Northern Cities:		
Chicago	5.0	3.1
Cleveland	4.1	1.3
Detroit	2.6	1.5
Newark	1.2	...
New York	1.2	0.4
Philadelphia	2.3	2.4
Pittsburgh	2.5	1.7
St. Louis	3.9	2.0
Southern States:		
Alabama	1.7	0.2
Arkansas	1.3	0.2
Florida	0.6	0.2
Georgia	1.5	0.4
Kentucky	3.1	1.6 *
Louisiana	0.8	0.2
Mississippi	0.9	0.2
North Carolina	1.9	0.2
South Carolina	1.3	0.3
Tennessee	2.0	0.6
Virginia	1.9	0.6

* 1930–1932

The question whether this disparity in mortality may not be due to differences in the age distribution of both races may well be discussed at this juncture. This factor does not seem to have any influence whatsoever. Pevaroff and Hindman [3] investigated this matter and demonstrated that the disparity in mortality from scarlet fever in the two groups existed even after the rates were adjusted for differences in age distribution. Table III shows this well.

The distribution of deaths in the different age groups seems to be very similar for both races in the North and South. The significant fact, shown in Table IV, is the marked concentration of deaths in the age group 0–5 years in both races in most of the cities and states. In practically all of the communities from one-half to three-fourths of all the deaths among white and colored persons occurred in children under 5 years. Doull [4] was among the first to call attention to this phenomenon in the white population in temperate and tropical climates. He explained the occurrence in the North on the basis of the degree of aggregation of population; while in the South he attributed it to one or all of 3 factors: a corresponding concentration of cases, an increase in the relative case fatality in the younger ages, or a development of an early and widespread immunity of the southern population.

When we turn our attention to the case fatality rates, certain differences are to be recorded. In Table V, it is observed that in 12 of the 16 communities, the case fatality rates are higher for the Negro than for the white. As with the mortality rates, the inequality in the case fatality rates for the two races is greater in the southern states and cities than in the northern cities. For the southern states the group fatality rates are 1.5 and 3.1 for white and Negroes respectively; for the southern cities, 1.1 and 1.9, and for the northern cities, 1.3 and 1.2. One could well ask whether the higher case fatality rate in the Negro in the South is not due to

TABLE III

Scarlet Fever Mortality in Whites and Negroes in 10 Southern States

State	Period	Average Annual Death Rate per 100,000 *	
		White	Colored
Florida	1919–1929	0.89	0.26
Georgia	† 1922–1929	1.11	0.28
Kentucky	1917–1929	2.15	1.14
Louisiana	1918–1929	0.63	0.14
Maryland	1917–1929	2.38	0.81
Mississippi	1919–1929	0.97	0.31
North Carolina	1917–1929	1.59	0.36
South Carolina	1917–1929	0.86	0.25
Tennessee	1917–1929	1.99	0.71
Virginia	1917–1929	1.83	0.44
Average for 10 States		1.63	0.36

* Rates adjusted for differences in age distribution, standard population used being that of continental U. S. A., 1910.

† Out of registration area 1925–1927, inclusive.

TABLE IV

Percentage of Deaths from Scarlet Fever Occurring in Different Age Groups, 1930–1933

	Per Cent Deaths Under 5 Years		Per cent Deaths 5–9 Years		Per cent Deaths 10 and Over	
	White	Colored	White	Colored	White	Colored
Southern Cities:						
Atlanta	52	67	24	..	24	33
Baltimore	43	57	36	..	21	43
Birmingham	42	100	42	..	17	..
Louisville (1933)	29	..	14	..	57	..
Memphis	27	..	33	..	40	..
Nashville	67	..	33	..	..	..
New Orleans	31	..	38	50	31	50
Norfolk	..	67	..	..	100	33
Richmond	25	33	75	67	..	..
Northern Cities:						
Cleveland	40	75	32	25	28	0
Detroit	41	38	41	50	18	12
Newark	58	..	21 *	..	21 †	..
New York	46	50	27	17	27	33
Pittsburgh	43	50	31	..	26	50
St. Louis	19	50	23	..	58	50
Southern States:						
Alabama	70	71	22	29	8	..
Arkansas	67	50	21	50	11	..
Florida	48	25	16	25	36	50
Georgia	61	60	23	..	16	40
Louisiana	50	20	29	20	21	60
Mississippi	55	40	37	30	8	30
North Carolina	55	29	27	28	18	43
South Carolina	61	50	24	38	15	12
Tennessee	56	46	29	27	15	27
Virginia	48	21	28	43	24	36

* 5 to 14 † 14 and over

TABLE V

Mean Fatality Rates from Scarlet Fever for All Ages of White and Negro Population in Certain States and Cities, 1930–1933, inclusive

	Mean Fatality Rates for 4 Year Period, 1930–1933	
	White	Colored
Southern Cities:		
Atlanta	1.4	4.7
Baltimore	1.0	1.9
Birmingham	1.2	1.8
Louisville	1.0	1.2
Memphis	0.9	...
Nashville	1.4	...
Northern Cities:		
Chicago	1.9	2.2
Cleveland	1.2	0.4
Newark	0.5	...
Philadelphia	0.8	1.7
Pittsburgh	0.9	1.1
St. Louis	2.4	1.8 *
Southern States:		
Alabama	2.0	2.7
Louisiana	1.5	2.6
Mississippi	1.0	5.1 †
North Carolina	1.4	1.9

* 1932–1933
† 1931–1933

poorer reporting of cases in this region. The fatality rate for different age groups is also of interest, although interpretation is limited here because of the meagerness of data. For both races, North and South, the fatality rates are higher under 5 years of age. This is very well shown for the white population. The data in Table VI seem to show, however, that in both regions the rate is higher in Negro than in white children under 5 years of age.

It has been repeatedly said that scarlet fever is less prevalent in the South than North, and less in the Negro than in the white population. The data in Table VII do not seem fully to support these contentions. It is true that for both white and colored the morbidity rates are lower for the South than North; however, the white morbidity rates are very low in the 4 southern states; but in the 9 southern cities, the rates are very nearly as high as those of the 6 northern cities. Turning to the differences between the two races, it is found that in the southern states and cities this is quite marked. For the southern cities as a group, the

TABLE VI

Fatality Rates from Scarlet Fever in Different Age Groups, 1930–1933

	Fatality Rates Under 5 Years		Fatality Rates 5–9 Years		Fatality Rates 10 and Over	
	White	Colored	White	Colored	White	Colored
Southern Cities:						
Baltimore	2.1	4.1	0.7	...	0.8	2.7
Birmingham	2.3	7.7	0.9	...	0.8	...
Memphis	1.2	...	0.7	...	0.9	...
Nashville	3.2	...	1.0	...	...	...
New Orleans	1.6	...	0.8	4.2	1.2	5.9
Richmond	0.3	1.4	0.5	2.5	...	...
Northern Cities:						
Cleveland	2.7	1.1	0.8	0.2	1.1	...
Pittsburgh	1.9	2.7	0.5	...	0.7	2.2
St. Louis	2.1	3.0	1.2	...	4.2	3.5
Southern States:						
Alabama	4.6	7.0	1.0	1.5	0.6	...
Mississippi	1.7	9.1	0.9	1.9	0.3	7.1
North Carolina	2.7	1.8	0.8	1.2	0.9	2.9
Virginia (1933)	3.1	2.9	1.3	3.2	0.8	3.5

TABLE VII

Mean Morbidity Rates from Scarlet Fever for All Ages of White and Negro Population in Certain States and Cities, 1930–1933, inclusive

	Mean Mortality Rates per 100,000 Population for 4 Year Period, 1930–1933	
	White	Colored
Southern Cities:		
Atlanta	283.3	34.7
Baltimore	256.4	61.6
Birmingham	146.2	13.6
Louisville	251.0	38.7
Memphis	326.9	19.5
Nashville	144.9	3.5
New Orleans	113.2	21.9
Richmond	260.3	93.9
Northern Cities:		
Chicago	259.4	141.1
Cleveland	338.9	325.1
Newark	233.7	162.7
Philadelphia	284.6	139.2
Pittsburgh	298.1	152.0
St. Louis	88.3	109.1 *
Southern States:		
Alabama	82.9	6.9
Louisiana	52.6	6.2
Mississippi	83.9	3.8 †
North Carolina	136.8	10.1

* 1932–1933
† 1931–1933

morbidity rate is 6.2 times higher than that of the Negro, while for the southern states the ratio is 13.1 to 1. On the other hand, this does not seem to be the case in the northern cities. The ratio of white to Negro morbidity rate in these 6 cities is only 1.5 to 1. Thus, as with the mortality rate and the case fatality rate, the morbidity rate shows the greatest inequalities in the southern states, less in the southern cities, and least in the northern communities. It is also to be noted that there is as much disparity between the morbidity rates of the northern and southern Negro as between the southern white and Negro. The rates for the Negro in the northern cities were on the average 4.8 times higher than that of the Negro in the southern cities, and 25.2 times higher than that of the Negro in the 4 southern states.

The distribution of cases according to age groups does not seem to show any essential differences between the two races. The only noteworthy fact in Table VIII is the concentration of cases not in the 0–5 year group as would be expected on the basis of the concentration of deaths, but in the age group 5–9 years. From 40 to approximately 60 per cent of the cases of scarlet fever fell in this age group in both races and geographical areas. The uniformity of these percentages is rather striking. Thus, the opinion of Doull that the concentration of deaths in the younger ages in the South may be partly due to a concentration of cases in this period does not seem to find support in Table VIII.

DISCUSSION

The marked differences in the mortality and morbidity from scarlet fever in the white and Negro population in the South have led investigators to state that this disease is not common in the Negro and that therefore he is highly resistant to it. This resistance has been explained on the one hand on his resistant ectoderm,[5] and on the other hand, on the assumption of a longer racial experience than that to which the white race has been subjected.[6] These two explanations, however, do not seem to hold true when two facts are considered. In the first place, our data show that although there are great differences in the South, there is in the northern cities very little inequality in the mortality and morbidity rates from scarlet fever in the white and colored populations. If the Negro were highly resistant to this disease, even though his mortality and morbidity in the North and South might not be similar, the disparity between the two races

TABLE VIII

Percentage of Cases from Scarlet Fever Occurring in Different Age Groups, 1930–1933

	Per cent Cases Under 5 Years		*Per cent Cases 5–9 Years*		*Per cent Cases 10 and Over*	
	White	*Colored*	*White*	*Colored*	*White*	*Colored*
Southern Cities:						
Baltimore	21.2	27.1	50.0	41.8	28.7	31.0
Birmingham	22.9	23.6	52.7	60.0	24.4	16.4
Louisville	17.9	24.3	43.2	45.9	38.8	29.7
Memphis, 1931–33	20.8	27.4	41.5	50.0	37.7	22.6
Nashville	28.9	16.7	45.4	50.0	25.6	33.3
New Orleans	21.3	29.3	50.0	41.4	28.7	29.3
Richmond	24.0	35.7	43.6	40.2	32.4	24.1
Northern Cities:						
Chicago	23.4	30.2	47.9	41.6	28.7	28.2
Cleveland	18.1	28.1	51.7	52.9	30.2	19.0
Newark	23.7	8.9	49.0	32.1	27.3	58.9
Philadelphia	32.8	25.7	55.2	57.5	11.9	16.9
Pittsburgh	19.4	22.3	49.3	51.3	31.3	26.4
St. Louis, 1932–1933	21.9	30.7	45.2	42.8	32.9	26.5
Southern States:						
Alabama	31.1	26.9	44.6	49.4	24.3	23.6
Georgia, 1932–1933	28.9	24.2	39.9	45.5	31.1	30.3
Mississippi, 1931–1933	28.0	18.8	47.0	45.3	24.9	35.9
North Carolina	28.3	28.8	45.8	43.5	25.8	27.7
Virginia, 1933	22.3	22.7	43.1	38.8	34.6	35.6

would be just as great in the North as in the South. This has not been shown in our data.

Secondly, the idea of racial susceptibility must be discarded when the results of Dick test surveys are considered. Pevaroff and Hindman [7] in Cleveland, Smythe and Nesbit [8] in Gary, and others have shown that there is no significant difference between reactions of white and Negro children to the Dick test.

The recorded low mortality and morbidity from scarlet fever in Negroes in the South may be explained on two facts—(1) the occurrence of very mild and subclinical cases which are not recognized and not reported; and (2) on the very poor reporting of typical cases and deaths in the rural areas of the South where almost 70 per cent of the southern Negroes are to be found.

That very mild and atypical cases of scarlet fever must occur widely in the South draws support from the results of Dick test surveys made in certain tropical countries. Doull [9] in Rio de Janeiro, Dubois [10] and Van Slype [11] in Belgian Congo, and Nazario [12] in Puerto Rico, have shown the higher prevalence of negative Dick tests and the earlier appearance of this immunity in children in the tropics. No differences were found between Negroes and whites. Mayer and Davison [13] have similarly shown that although in North Carolina, the number of cases reported was less than half that in New York City, yet the rate of susceptibility was much lower than that found in various other comparable groups in the United States. Thus, it must be assumed that there is a wide prevalence of mild and atypical cases in the South.

Of more importance in accounting for the low recorded mortality and morbidity from scarlet fever in the Negro in the South is the poor reporting of

cases and deaths of typical scarlet fever. It was noted in our data that more cases and deaths were reported in the southern cities than in the states. Lack of medical facilities must account in a large measure for this disparity. Seventy per cent of the Negroes of the South live in the rural areas, and it is in these regions that the lack of hospitals and physicians is greatest. For example, the 4 states, Pennsylvania, Ohio, New York, and Illinois, with a population of about 2,000,000 Negroes, have 900 Negro physicians; while the states of Georgia, Mississippi, Alabama, and North Carolina, with twice as large a Negro population, have but half as many Negro physicians. In the United States as a whole, there is 1 physician for every 785 persons, but in the State of Mississippi, there is only 1 Negro physician for every 14,000 Negroes.[14] Thus, many typical cases and deaths from scarlet fever must occur in the Negro which are not seen by physicians and, therefore, not reported.

Poor reporting of deaths and cases in the Negro in the South is substantiated from another angle by the investigations of Puffer [15] and Gover.[16] Puffer states that there seems to be marked incomplete registration of colored deaths in the rural area as shown by the large variation in the colored death rates in the counties of Tennessee. She also observes that in 15 rural counties of West Tennessee where the colored population is large, 17.7 per cent of the death certificates were not signed by physicians, and, further, that the colored death rates from ill-defined and unknown causes of death for 1933 for Mississippi, Alabama, Tennessee, South Carolina, Georgia, and Arkansas were over 100 per 100,000 population. Thus, in Mississippi, the cause of death was unknown in 1 in 5 deaths. Discussing this same fact, Gover states that the rate for ill-defined causes for 1931–1933, in 14 southern states, for the age group under 5, was 4 times higher in the Negro than in the white.

SUMMARY

1. The differences in scarlet fever mortality and morbidity rates between the Negro and white is greatest in southern states, and least in northern cities. In the latter, there is very close approximation between the Negro and white rates.

2. The case fatality for all ages seems to be higher for the Negro in all communities both North and South. This is true particularly in the age group under 5.

3. The concentration of deaths for Negroes and whites in practically all communities is in the age group 0–5 years while the cases are concentrated in the period 5 to 9 years. There are no significant differences in the two races.

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Control of Syphilis in a Southern Rural Area*

A Preliminary Report

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THE purpose of this program is to determine the most effective method of controlling syphilis in the southern rural Negro. Has the mobile clinic a place in such a program? Does it have an advantage over the stationary clinic? What is the most efficient way to obtain blood tests on all inhabitants? Do case finding and case holding activities prove worth while with the southern rural Negro? If so, what kind of worker can do these best? Can these Negroes be taught the facts about syphilis, and if so what are the best methods?

The U. S. Public Health Service in coöperation with the Georgia State Department of Health and the Glynn County Board of Health established this program in September, 1937, in an attempt to answer these questions. Effective control programs already had been established for white people in some of the northern states. No such program for the Negro was in progress in the South. Yet the South has a large Negro population—25 per cent—1 out of every 4 of whom has syphilis. The solution of this Negro health problem is essential if we hope to control syphilis in the United States.

LOCATION OF PROJECT

Three coastal counties, McIntosh, Glynn, and Camden, in southeast Georgia were selected. They comprise a District Health Department in which a syphilis program had been in progress for several years. The office of this department is in Brunswick, the county seat of Glynn, the center county.

The population of the 3 counties is 31,491, of which one-half are colored. Approximately half of this population is in Brunswick.

The land consists chiefly of pine woods and swamps, sparsely settled. Very little farming is done. Outside of Brunswick, the chief industries are turpentine, lumber, and fishing.

There are no large towns. The settlements are mainly centered around the turpentine camps. The Negroes live off the highways, back in the woods for convenience to work. This makes transportation one of the chief difficulties in providing these people with treatment for syphilis.

SYPHILIS CONTROL PROGRAM'S PERSONNEL

One physician administers the program and operates the trailer clinics.

* Read before the Health Officers Section of the American Public Health Association at the Sixty-seventh Annual Meeting in Kansas City, Mo., October 26, 1938.

Accompanying him are one white nurse and one Negro nurse. The white nurse prepares and assists in the administration of neoarsphenamine. The Negro nurse gives the intramuscular injections of bismuth under the supervision of the assistant physician. Both nurses give diphtheria toxoid, and typhoid and smallpox immunizations, take blood smears for malaria, dispense atabrine, and collect specimens for hookworm.

The follow-up personnel consists of 1 white female, 1 white male, and 2 Negro nurses.

There are stationary clinics held in Brunswick, on the islands of Sapeloe, St. Simons, and Sea Island. These are cared for by the Commissioner of Health with the aid of a contract physician and 2 nurses. These clinics take care of the larger centers of population, leaving the more sparsely settled portion for the trailer clinics. Two stenographers complete the personnel.

THE WAY WE BEGAN

A one day census survey of sources of treatment in the three counties was completed. Four hundred thirty-seven cases of syphilis were reported as being under observation or treatment during the survey period. The rate for syphilis was found to be 5 times as great in the colored race as in the white. In the white race, the rate for the two sexes was practically the same; while in the colored race, the female showed 35 cases per 1,000 as compared to 28 cases per 1,000 for the male.

The difficulty experienced in holding patients with syphilis under treatment was well illustrated by this survey. The majority lapsed before the end of the first year and in no case had a patient received minimum protective therapy (at least 20 injections of arsphenamine with 20 injections of heavy metal). Only 6 per cent had received as many as 20 injections of arsphenamine.

The private physician was treating only 12 per cent of the cases of syphilis and these were in the hands of 45 per cent of the physicians. It was found that 95 per cent of the Negro patients were in the clinics and but 67 per cent of the white patients.

Next, we interviewed the leading citizens in all the communities, the owners of the turpentine stills, lumber camps, and shrimp fisheries, the superintendents of the other industries, Negro preachers, Negro school teachers and Negro midwives. Our program was explained to them. Their assistance and coöperation were requested.

Ten clinic locations were selected as a beginning, using Brunswick as our base. Posters advertising these clinics were distributed all over the three counties. They were tacked upon churches, stores, telephone poles, and similar places. They were given also to grocers and butchers to give out with purchases. Negro preachers announced the clinics from the pulpit. Negro ministers and teachers have given us splendid coöperation and have been of invaluable assistance in our program. The news spread quickly as soon as our clinics began.

Shortly after, we arranged meetings at the various Negro churches, usually on Sundays. We would tell the essential facts about syphilis and the importance of having a blood test. Occasionally a movie was presented in an attempt further to illustrate these essential facts. However, we have not found any movie on syphilis suitable for a Negro audience. Movies available are not simple and plain enough for them to understand. The viewpoint must be different and the dialogue done in their own language.

After the meeting, we took blood tests on all the congregation, with the preacher setting an example. The church meetings are of more value from an educational and publicity standpoint

than for the actual number of blood tests taken. We have found that house-to-house canvassing by a Negro nurse to obtain blood tests is much more efficient. More persons are tested, very few are missed, and it is more economical. One nurse can go out even in the sparsely settled regions, in the woods and swamps and obtain an average of 40 blood tests a day.

There are other advantages to the house-to-house canvass. The nurse can assist very greatly in educating these people while she is taking the blood tests. Then, too, immunizations against diphtheria, typhoid, and smallpox can be given, combining syphilis with a general health program.

Every colored school in the three counties was visited and blood tests were taken on the children. All food handlers in the Health District must have blood tests before they are issued work cards. The larger industries in Brunswick have been practically unanimous in requiring blood tests on all employees.

As we progressed, we found clinics were needed in more places, and that one or two places we had selected first were not well situated. So, slowly but progressively, we have established new clinics until at present there are 24 trailer clinics held each week, traveling 500 miles. Some of these require an hour and a half, others shorter periods, depending upon the number of patients. We have been unable to establish clinics in certain small communities because of lack of time. At some of these, a Negro patient with a car will bring some fellow patients. Many times, the trailer will pick up the patients along the road and take them to and from the clinics. In one community, we have arranged for a school bus to make a circle of about 30 miles in order to collect patients and bring them to a central meeting place. This service has not only increased the attendance at this one clinic but has decreased the number of lapsed patients.

OUR PROGRAM

Our first concern was to find the syphilis. We did this through blood testing as explained previously. Whether the test is taken on the trailer, in the home, or in the factory, we send individual letters to all persons, telling them whether their blood is good, bad, or doubtful. If doubtful, we request that they return for another blood test. If their blood is bad, we ask them to report to the nearest clinic, giving the day, time, and place. When the test is negative, we ask them to return in three months for another test. A surprisingly large number are returning.

The letter has several advantages. In the first place, we have found that more persons come in for treatment after receiving a letter than if they are told, when taking the test, to return a week later for the result. The letter does have a psychological effect, too. They like to receive letters, just as we all do, and particularly in a large, official looking envelope. They show it to their friends. They carry it around with them for weeks. It forms an impression upon them and even more important, makes and keeps them *blood test conscious*. Finally, it impresses upon the patient the result of the test. So many times a patient will say he had a blood test some time ago but either the doctor or clinic did not tell him the result, or, what happens more frequently, he did not go back. We believe our letter eliminates this complication. These letters take considerable time and effort to prepare but we are convinced from our limited experience that they are more than worth the trouble and expense.

The patient's history is taken, a physical examination is made, and he is placed under treatment. The physician attempts to obtain the source of infection and all contacts. To learn

the source is practically impossible. The majority of our cases are latent. Primary and secondary syphilis are rare. Naturally, as promiscuous as these people are, it is impossible to obtain the source of an infection obtained 2, 4, or 10 years ago. We do get marital contacts and extra-marital contacts of recent months. They cannot or will not remember contacts very far back. All sources and contacts are investigated and brought in for examination. We concentrate on those of the infectious cases but where there is time, we obtain the late latent contacts too.

Naturally our aim has been to find the early, infectious cases and give them a minimum of 20 each of arsenical and bismuth injections in order to render them permanently noninfectious. If they remain under treatment, we will attempt to obtain a cure, but our main objective is sterilization of the infectious man or woman.

Following the examination of the patient, the physician attempts to instill in him a few facts concerning syphilis —what the disease is, what happens from little or no treatment, and what consistent treatment will accomplish. I am afraid that in the majority of cases these little talks fall on deaf ears. Their reply is always "yas suh, yas suh," but one can almost feel that they do not comprehend what has been said. To supplement this talk, we give each patient the pamphlet prepared by the U. S. Public Health Service, *Syphilis, Its Cause, Its Spread, Its Cure*. Frankly, I do not know how much good this does. They all say they read it and understand most of it but they ask very few questions, which makes one doubt that they really have read it.

Force is used to hold patients in only three groups and one of these indirectly. All food handlers with syphilis must take treatment or lose their work card. In one small town we received unasked assistance from the mayor. He became interested in our program and requested us to inform him of any patients in his city who refused to take treatment. We gave him the names of a few incorrigible ringleaders. He sentenced them to jail or to the clinic. They chose the clinic. This has had a beneficial effect upon the other patients in this community.

Through midwives we obtain blood tests on all pregnant women and treat those found infected. All midwives are licensed in Georgia. Failure to coöperate with us would mean a revocation of their license. We had one midwife bring an 8 months pregnant woman 14 miles to the clinic and they walked all the way.

We are often asked if the Negro does not dislike to come to a public clinic which advertises the fact that he has syphilis. Fortunately, the Negro is not so hypocritical as the white, or perhaps one might say that his moral code is not so stringent. Then, too, many do not relate "bad blood" with sexual relations, so there is no stigma.

They find out they have bad blood. Many are disappointed if their blood is good and want treatment, regardless. They all have a misery some place. They blame this on the bad blood. The treatment does act as a general tonic. They feel better and credit the shots. We are satisfied not to dispel their belief as long as they will continue treatment.

They really like to come to the trailer. It has become a social function with them, next to the church. There is a distinction for them to come into this clinic on wheels and receive treatment. It has a definite appeal. Then, too, they all like some medicine and they like it all the more because it is free.

The trailer was disabled for 4 weeks because of an accident. We arranged clinics in schoolhouses and churches,

but our patients dropped off very greatly. They returned as soon as the trailer was repaired. We believe that this is conclusive proof that the mobile unit has an advantage over the stationary clinic, at least with this group of patients.

Coöperation with the private physicians in the three counties forms a part of our program. This coöperation consists of consultation service, darkfield and serological examinations, free Keidel tubes, free neoarsphenamine and bismuth for all cases, pertinent literature, particularly the supplements to *Venereal Disease Information* and, finally, a subsidy for the treatment of white indigent infectious cases and pregnant women.

We have found the physicians passively coöperative. Negro syphilis patients are poor pay; physicians would prefer we treat them. Only a few take advantage of our free drugs and sub-

Figure I

POSITIVE BLOOD TESTS IN NEGROES BY AGE GROUPS IN THREE GEORGIA COUNTIES

1937 - 1938

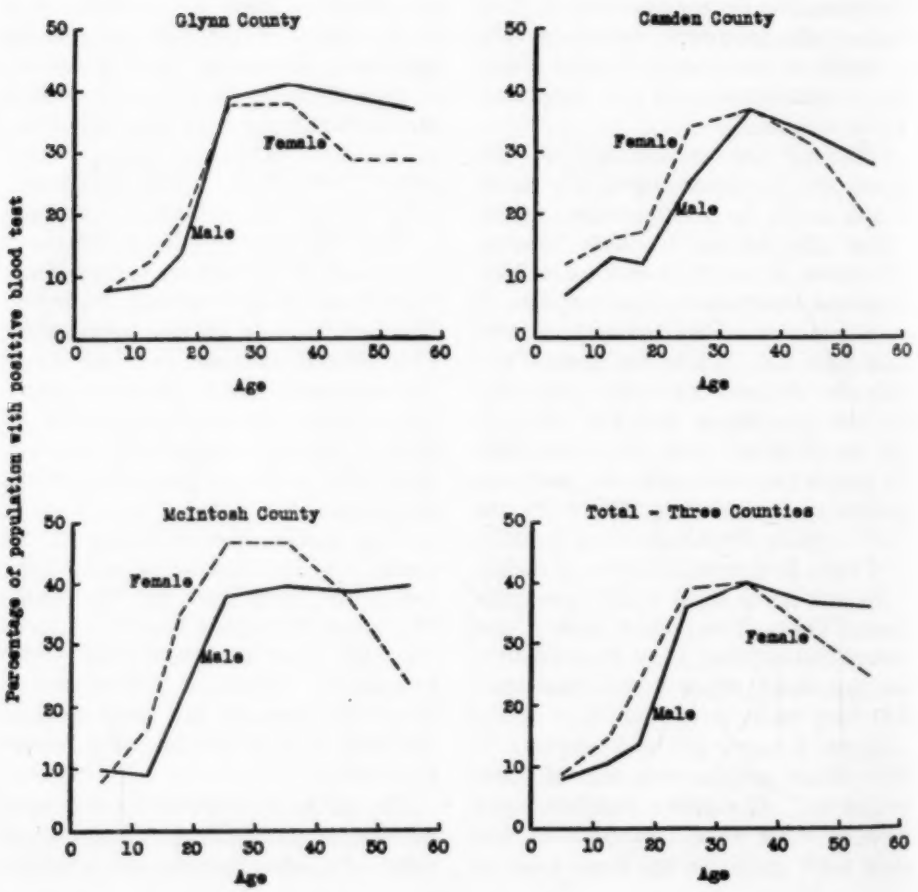


TABLE I

Positive Blood Tests in Negroes By Age Groups in Glynn, Camden and McIntosh Counties, Georgia, 1937–1938

Age	Male			Female			Total		
		Positive			Positive			Positive	
	Total Examined	Number	Per cent	Total Examined	Number	Per cent	Total Examined	Number	Per cent
0–10	970	80	8.2	991	90	9.1	1,961	170	8.7
11–15	700	74	10.6	1,007	148	14.7	1,707	222	13.0
16–20	638	87	13.6	867	207	23.9	1,505	294	19.5
21–30	1,201	428	35.6	1,582	622	39.3	2,783	1,050	37.7
31–40	759	304	40.1	979	388	39.6	1,738	692	39.8
41–50	453	169	37.3	620	197	31.8	1,073	366	34.1
51–60	313	111	35.5	319	79	24.8	632	190	30.1
60–	358	100	27.9	235	51	21.7	593	151	25.5
Total	5,392	1,353	25.1	6,600	1,782	27.0	11,992	3,135	26.1

sidization for white indigent infectious cases. However, more are sending patients for darkfield examination to us and we are called in more frequently for consultation. It is probably a matter of education and gradual realization of the assistance we can give.

Only two physicians in the three counties verbally object to our program. They feel that these Negroes, whose average wage is but $6 a week, can afford to pay them $2 to $3 a week for anti-syphilitic treatment. Their criticism is sincere and frank, and we try to coöperate with them whenever possible. They have not injured our program in any way, however.

A recent addition to our program has been an attempt to obtain serological tests for syphilis on all the white people in the three counties. We began with one county. Public meetings were arranged at the larger centers of population under the sponsorship of the Parent Teachers Clubs of these communities. These meetings were advertised in the usual way, with posters, circulars, newspaper advertisements, and an article in the weekly newspaper by the president of the local Parent Teachers Club. In addition ministers announced the meetings from the pulpit.

We presented the slide film, " For All Our Sakes," and then talked to them very briefly about syphilis and why they should have a blood test. Suitable literature was also distributed. No attempt was made to obtain blood tests at these meetings. However, those attending were informed that nurses in a house-to-house canvass would come to their homes within the next few days for this purpose.

The meetings were well attended. The people were interested. Refusals of blood tests were rare. Sixty-six per cent of the adult white population of the entire county were examined. Less than 2 per cent were positive. We sent individual letters to these people just as we had to the Negro patients.

Several weeks after we completed our canvass, a white mother brought her 12 year old daughter to the trailer and asked if we would take a blood test on her. She explained that the daughter had been away at the time of our survey.

We have begun a similar program in a second county and the results so far have been equally encouraging. We hope to make the entire population just as blood test minded as they are vaccination minded.

WHAT HAS BEEN ACCOMPLISHED

Eighty per cent of the Negro population in these three counties have been tested. Table I gives a statistical analysis of these blood tests for the

TABLE II

Classification of Negro Syphilis Patients in Three Georgia Counties by Age and Stage of Infection

Stage of Infection	Age of Patient								
	0–10	11–15	16–20	21–30	31–40	41–50	51–60	Over 60	Total
				Male					
Primary	—	1	7	14	3	3	—	—	28
Secondary	—	1	7	15	5	—	—	1	29
Early latent	—	1	32	131	37	8	1	—	210
Late latent	—	—	4	126	182	103	74	36	525
Congenital	40	33	7	—	—	—	—	—	80
All others	—	—	3	23	28	14	18	18	104
Total	40	36	60	309	255	128	93	55	976
				Female					
Primary	—	2	—	3	—	—	—	—	5
Secondary	—	2	7	12	3	—	—	—	24
Early latent	7	53	191	158	20	2	1	—	432
Late latent	—	—	16	191	232	95	41	20	595
Congenital	48	71	12	4	—	—	—	—	135
All others	—	1	13	31	12	22	9	3	91
Total	55	129	239	399	267	119	51	23	1,282
				Total Male and Female					
Primary	—	3	7	17	3	3	—	—	33
Secondary	—	3	14	27	8	—	—	1	53
Early latent	7	54	223	289	57	10	2	—	642
Late latent	—	—	20	317	414	198	115	56	1,120
Congenital	88	104	19	4	—	—	—	—	215
All others	—	1	16	54	40	36	27	21	195
Total	95	165	299	708	522	247	144	78	2,258

TABLE II-A

Classification of Negro Syphilis Patients in Three Georgia Counties by Age and Stage of Infection (Per cent)

Stage of Infection	Age of Patient								
				Male					
	0–10	11–15	16–20	21–30	31–40	41–50	51–60	Over 60	Total
Primary	—	2.8	11.7	4.5	1.2	2.3	—	—	2.9
Secondary	—	2.8	11.7	4.9	1.9	—	—	1.8	3.0
Early latent	—	2.8	53.3	42.4	14.5	6.3	1.1	—	21.5
Late latent	—	—	6.6	40.8	71.4	80.5	79.6	65.5	53.8
Congenital	100.0	91.6	11.7	—	—	—	—	—	8.2
All others	—	—	5.0	7.4	11.0	10.9	19.3	32.7	10.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
				Female					
Primary	—	1.6	—	0.7	—	—	—	—	0.4
Secondary	—	1.6	2.9	3.0	1.1	—	—	—	1.9
Early latent	12.7	41.1	79.9	39.6	7.5	1.7	2.0	—	33.7
Late latent	—	—	6.7	47.9	86.9	79.8	80.4	87.0	46.4
Congenital	87.3	55.0	5.0	1.0	—	—	—	—	10.5
All others	—	0.7	5.5	7.8	4.5	18.5	17.6	13.0	7.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
				Total Male and Female					
Primary	—	1.8	2.3	2.4	0.6	1.2	—	—	1.5
Secondary	—	1.8	4.7	3.8	1.5	—	—	1.3	2.4
Early latent	7.4	32.7	74.6	40.8	10.9	4.0	1.4	—	28.4
Late latent	—	—	6.7	44.8	79.3	80.2	79.9	71.8	49.6
Congenital	92.6	63.0	6.4	0.6	—	—	—	—	9.5
All others	—	0.6	5.3	7.6	7.7	14.6	18.7	26.9	8.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

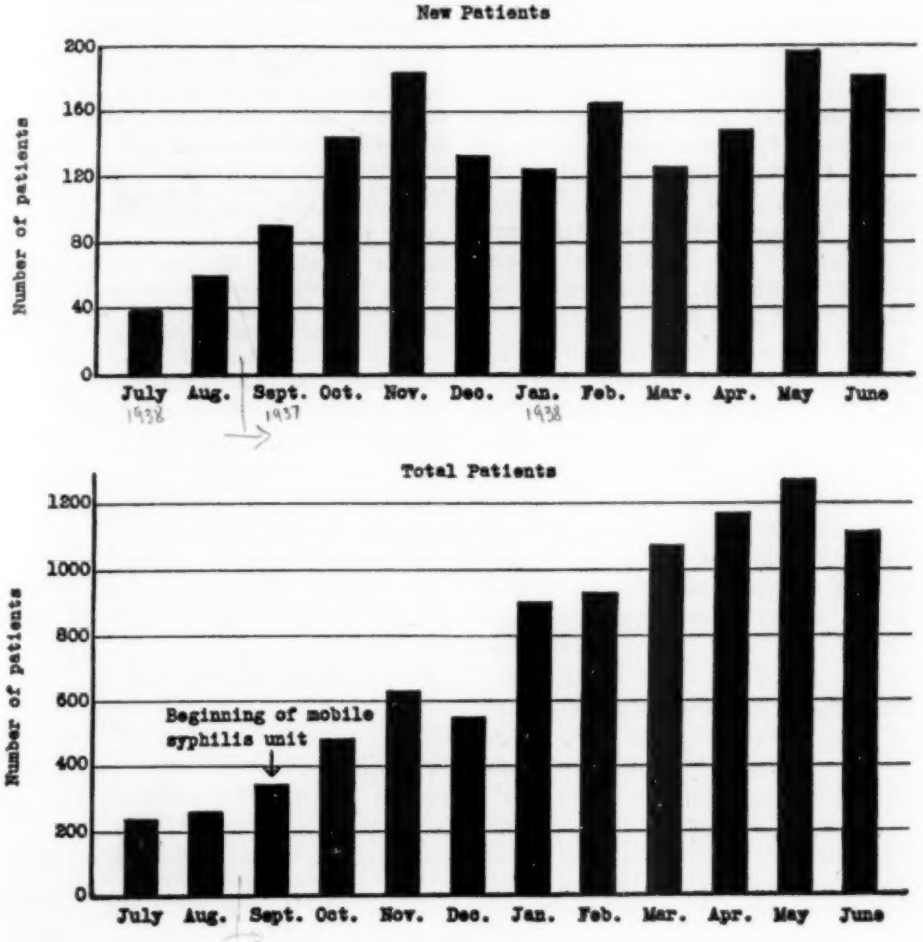
first 9 months. Twenty-five per cent of the males and 27 per cent of the females of all age groups were found to have a positive test for syphilis, giving a total of 26 per cent positive. This includes every Negro school child in the three counties, which naturally brought the positive percentage down considerably. Taking only those 16 years and over, the percentage of positive serology increases to 33 per cent. Figure 1 presents in graphic form the results of the blood tests by age groups in each of the three counties. The females of one county in the 20 to 40 age group showed 47 per cent positive.

Glynn County coöperated in the Rosenwald Study of Syphilis in 1930. It is interesting to note that they found, as a result of their serological survey, 26 per cent positive. We found, in the same county, 7 years later 27 per cent serologically positive for syphilis.

Seventy-seven per cent of those found to have a positive serology for syphilis were brought in for examination and

Figure II

SYPHILIS PATIENTS ATTENDING CLINICS IN MCINTOSH, GLYNN AND CAMDEN COUNTIES, GEORGIA, DURING 1937 - 1938



treatment. Figure II presents graphically the increase of new patients and the increase of total patients in the three counties since the trailer clinics began. Twenty-two hundred fifty-eight Negro patients were examined and treated during the past 11 months. The classification by age and stage of infection of these patients is given in Table II.

Eleven hundred and fourteen patients lapsed from treatment, excluding those that moved away, died, or were dismissed from the clinics. Sixty-eight per cent of these lapsed patients were returned to treatment. The chief reasons for lapse are:

	Per cent
Employment	23.7
Lack of interest (Had no real reason)	15.8
Illness	14.0
Treatment discomfort	11.6
Intramuscular injections of bismuth	9.9
Inconvenience to clinic	9.8
Out of town temporarily	7.8

Case holding constitutes our greatest problem. We are hoping that education may eventually lighten the load of the follow-up worker.

OUR CONCLUSIONS THUS FAR

1. The mobile syphilis clinic has a definite place in the control of syphilis among the southern rural Negroes. We believe it has many advantages over the stationary clinic. A large amount of territory can be covered. Clinics can be held where there would be no available place for a stationary clinic. The ease and swiftness of operation is a decided advantage, less than 5 minutes to set up and 5 minutes to close up. There is the added advantage of convenient examination and treatment facilities. Negro patients like to come to the trailer for treatment. Other health measures can be combined with syphilis, particularly immunization. It makes a good advertisement for general health programs and aids materially in health education. Finally, the mobile unit is economical. It has cost an average of $52.52 a month for gasoline, oil and washing.

2. We believe that the house-to-house canvass for obtaining blood tests is the most efficient method of finding syphilis.

3. Case holding is essential to the success of this program; case finding less so because we find our syphilis in the house-to-house serological dragnet. We believe also that the successful follow-up worker is a type rather than a result of education or training, at least for work among the southern Negro. It is probably more efficient to have a nurse of this type than a social worker because she can combine general health work with syphilis.

4. We believe that the Negro can be taught, slowly, the facts about syphilis and the necessity for treatment. This can best be accomplished by talking movies, simple literature, and through Negro ministers and school teachers. The movie is probably our best medium for education of the Negro, but, unfortunately, there is no movie at the present time suitable for such an audience.

Public Health Nursing Program of the Future*

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IT was the late Dr. William Welch who listed the public health nurse as one of the outstanding contributions which America has made to the cause of public health. It is safe to say that there is not a health officer today who does not gratefully echo this evaluation. Certain it is that the public health nurse has become a central figure in the modern public health campaign.

While it is relatively easy, from past experience and present performance, to arrive at an evaluation of the public health nurse in the general picture of today's public health program, it is not so easy to say what the future of the public health nurse in this picture will be. In fact, it would be folly to attempt to predict the future with any degree of finality. However, reviewing the development of the public health nursing service, there appear several rather suggestive changes in the application of this service which may serve as indices for possible future changes.

First, we note the recognition of the need for more than the traditional bedside care. The patient is best helped if he learns to help himself. This calls for the instruction of the patient in the essentials of personal hygiene and instruction in the specific requirements outlined by the attending physician.

To the city of Boston, in this country, must go the credit for recognizing this opportunity in visiting nurse service and for being first in the field by establishing the first "Instructive District Nursing Association" in 1886 expressly for this purpose.

From then on, as Winslow [1] has pointed out, "We find the teaching of hygiene as a recognized objective for the district nurse along with the care of the sick in their homes."

With the extension of medical science, especially the discoveries in bacteriology and the development of societies organized for the purpose of applying this newer knowledge for the study and prevention of various health problems such as tuberculosis, infant and maternal mortality, etc., we find the instructive visiting nurse as the constant and increasingly important coworker of the physician.

Inevitably, as the various special health problems were attacked, nursing service developed *pari passu* into as many specialties.

We find, accordingly, the nurse specialist for tuberculosis, for infant welfare, for maternal welfare, for school medical supervision, for communicable diseases, for preschool serv-

* Read before the Public Health Nursing Section of the American Public Health Association at the Sixty-seventh Annual Meeting in Kansas City, Mo., October 25, 1938.

ice, for mental hygiene, for dental service, for cancer control, for industrial hygiene, etc.

This trend toward undue specialization in the activity of the public health nurse brought about the next major change in the service of public health nursing. It was recognized that the visiting of several specializing nurses in the same family was not only uneconomical from an administrative viewpoint, but was also apt to prove confusing and, at times, irritating to the family.

Furthermore, the nurse specialist, by intensifying her attention on just one particular problem was likely to narrow her viewpoint and so overlook other health needs of the family which obviously could, and should, have been dealt with at the same visit.

The reaction to these criticisms of specialized public health nursing found expression in the present form of the generalized educational system under which the visiting nurse is to attend to all of the public health nursing problems in a district of not more than 2,000 population, dealing with the family as a whole.

The future of the public health nursing program calls for consideration mainly of two points, namely, the quantitative and the qualitative needs of the service.

Taking first the quantitative needs of the public health nursing service, one comes readily to a conclusion. If the present ratio of one nurse for each 2,000 of population is sound and justified then the expansion of the service is clearly indicated since it appears that the prevailing ratio in urban communities is about 1 to 4,000 population, and rural areas have nursing service of only 1 to 9,000 to 1 to 11,000 of population.

On the basis of the indicated standard ratio of public health nurse to population there can be no question that this service needs expansion. That this service will see expansion seems also certain. As Sigerist [2] points out, the history of medicine proves that, "The community will obtain the medical care it wants."

That the community or the public is rapidly becoming more and more health conscious and is becoming vocal in its demand for health service was clearly demonstrated recently in the National Health Conference held in July, 1938, in Washington, D. C.

Significant too is the endorsement which the American Medical Association has given to the general expansion of public health service, including nursing service.

While popular demand as well as endorsement by the medical profession gives reasonable assurance for the quantitative or numerical expansion of the public health nursing service, there is no similar definite expression concerning the character or the qualitative side of such nursing service as this is likely to expand in the future.

Let me make it clear at once that I have in mind here, specifically, a declaration of plan or policy concerning public health nursing service by departments of health as the official agencies organized to render service to the public.

The existence of such bodies as the National Organization for Public Health Nursing and the League of Nursing Education is ample evidence of the keen interest which the nursing profession is taking in the development of its service.

These organizations have done an extraordinarily fine job in developing [3] public health nursing in this country and through their work have given this service the important keystone position which it justly occupies in the structure of present-day public health service.

It is, however, not with the detail of nursing technic that we are concerned here, but rather with the broad plans and policies of health departments in

utilizing nursing service for the protection and promotion of the public health.

Quite obviously, as medical science will add to its discoveries in dealing preventively or curatively with problems affecting health and life, the public health nurse will undoubtedly have her part in the program of service so far as this properly becomes a matter of public concern.

So, for example, venereal disease control, child guidance, the nutritional diseases, allergic disturbances, heart disease, and many other of the so-called chronic diseases, no doubt will increasingly see the participation of the services of the public health nurse.

In all of these activities there is represented merely an extension of service and not a change in the general policy that governs present-day public health nursing.

The most significant change that, in my judgment, will characterize the future program of public health nursing, so far as official agencies are concerned, will be in the resumption, or rather the extension of bedside care.

There is little doubt that in the development of the generalized educational plan of public health nursing now so generally followed by public health departments, the tendency has been to swing too far toward the purely educational approach and to omit more or less, if not entirely, the practical bedside care of the patient.

No doubt the development of this trend sprang from necessity rather than from a deliberate choice.

Bedside care, obviously, is quite time-consuming and nurses for public health agencies were hard enough to get. Furthermore the availability of the voluntary agencies who (fortunately) carried on the traditional bedside care service, created a tempting opportunity to try out the possibilities of the educational approach in public health problems.

The importance and value of instructing the patient and the family in what to do for themselves has been clearly demonstrated; there must be no neglect of this feature in public health nursing. However, it is equally clear that a public health nursing program that means to confine itself solely to the purely educational approach by verbal instruction will no longer satisfy the public demand for service. After all, teaching by demonstration is the best teaching. The public will better understand and appreciate the value of public health nursing when this service carries with it the realization of service that is of immediate recognized comfort and benefit to the patient and family.

Public health nursing in rural areas has of necessity remained closer to the practical bedside care type of nursing. It is my opinion that public health nursing in an urban setting must likewise resume more and more responsibility in the bedside type of service.

Assuming that such a change in the practice of public health nursing in official public health agencies is likely to come about, what will be the future of the voluntary agencies that now largely function in the field of bedside care?

Public health owes its development almost entirely to the initiative and demonstrations of voluntary agencies. It is the peculiar opportunity and privilege of the private agencies to do the pioneer or experimental work; to try out the new and when the value of the new has been demonstrated, to help further to make it the responsibility of official agencies established by government, to carry out public service.

In grateful recognition of the unique and important field of service in which the voluntary agencies have functioned, and are functioning, I sincerely hope that they may continue in this rôle for the benefit of the official agencies and the public in general.

Another feature in the public health nursing service which needs further development, is that of nurses' aides, for service in the home as well as for service in hospitals.

The public health nurse, as a professionally trained person, manifestly is entitled to a compensation commensurate with the cost of the years of training required of her, and the quality and responsibility of the service she renders.

There is, however, much in the character of work required for the patient in the home or in the hospital which represents purely manual labor. As a public service it may not be justified to have the time of a highly trained and proportionately relatively costly employee taken up by manual work which may just as satisfactorily be carried out by a less costly worker.

The increased utilization of nurses' aides or of visiting housekeepers, working under the supervision of the public health nurse, seems a necessary and desirable adjunct to the public health nursing program of the future. Likewise, with the increasing variety of service which the public health nurse will be called upon to render it will become necessary to add nurse consultants who will be specialists in their respective fields and whose particular duty it will be to assist the field nurse in dealing with special problem cases.

These, it seems to me, will be some of the changes in the public health nursing program that will be likely to characterize the future of that service.

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Morbidity and Mortality Statistics as Health Information*

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THE public and the press are always eager to learn the latest news in regard to the general health situation in any given locality or health jurisdiction. Reports which include the figures for cases and deaths of various diseases for any given week or month almost invariably get an O.K. for publication by the city editor or his counterpart on the county weekly. Indeed, the systematic and periodic release of health information of this statistical type is a veritable cornerstone in any health education program.

Of course, the press expects the health agency supplying this material to give a local slant to the news release. There is usually a welcome for more than just the bare statistics. If a health officer or his bureau of health information makes a habit of recognizing the opportunity, comparisons with health reports from other parts of the country or the state or the county may be worked into the news release to very good effect. It has always been my feeling that a very short clipping containing nothing but figures on morbidity and mortality bespeaks a lost opportunity in the field of health education. I have wept many a tear at reading of a diphtheria death, because the bare statistic stood alone without comment, and there was no mention of the preventive toxoid which might have saved the life of the child, if it had been given at the age of 6 months, or soon thereafter.

For a moment I would beg your indulgence in permitting me to describe what is referred to in my community as the *Saturday Letter to the Mayor* from the Commissioner of Health. I do this because of a desire to present a practical plan which has worked very advantageously for more than 20 years as a major item in the health education program of our City Health Department. The people of any community have a little more time to spend with their morning newspaper on Sunday than on any other day of the week. For this reason we always place a copy of the *Saturday Letter to the Mayor* on the city editor's desk for each of the two Sunday morning papers, as promptly as possible after noon each Saturday.

In the letter addressed to the Mayor, the Health Department, week by week, takes occasion to introduce, sometimes in quite brief paragraphs, information which it considers worthy of special public attention. This may be in the form of a warning, or an exhortation generally along "keep well" lines and associated with some disease that is prevalent or unusual. Occasionally there results nothing but the bare

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statistics in the Sunday morning papers, and this would be expected if there were a major diplomatic crisis in Europe or a hurricane sweeping across Long Island or New England. More commonly, however, the narrative and educational material upon which attention is focused in the letter to the Mayor appears in a corresponding article of major value in community health education.

The routine of sending the Saturday letter to the newspaper offices regularly each Saturday noon is never broken and the city editors look for this particular form of news release and even send a messenger to the Health Department every Saturday to assure its safe arrival.

It has occurred to me that you would be interested in knowing the type of headings which have appeared from Sunday to Sunday as a result of these efforts in health education which are based on the weekly morbidity and mortality statistics of our community. Out of 42 clipping heads from the two Sunday papers in 1938, 12 headings dealt with syphilis and 8 with diphtheria. Others dealt with scarlet fever, whooping cough, undulant fever, leprosy, tetanus, and dysentery. Samples of these are as follows:

Syphilis Cases Listed for Week Set Record.
Twenty-one Employees Asked in Drive on Syphilis.
Syphilis Control Is Under Way Here.
Syphilis Case Reports Double Previous Years.
Seven Diphtheria Cases Reported Here for Week.
Diphtheria Takes Its First Victim of Year; Inoculation Stressed.
No New Diphtheria Cases in Week.
Whooping Cough Death Cited in Health Report.
Undulant Fever Case Is Reported.
Leprosy Case Is Reported in Baltimore.

The system described in making use of morbidity and mortality statistics by this weekly report to the Mayor and the press, in reality is a method of carrying out actual provisions of the City Charter and Ordinances which require the Commissioner of Health to keep the Mayor informed in regard to the health conditions of the community. The *Saturday Letter to the Mayor* was established by my distinguished predecessor, Dr. C. Hampson Jones, who was closely associated with the public health service of our community for a period of 36 years. It has become so automatic that it protects the Health Department itself from overlooking important items, omissions which might otherwise lead to some embarrassment. I would like to give you just one experience in this connection.

Some years ago we had a case of leprosy and, pending the confirmation of the diagnosis, the case was not recorded in the weekly statistical table. We had a very coöperative city hall reporter representing the press and I persuaded him to postpone public mention of the case of leprosy until I gave him a "go ahead" and he promised to coöperate in what I considered a most unusual manner. It was my hope to arrange with the U. S. Public Health Service for the transfer of this case to the federal leprosarium in Carville, La., and have the patient on his way before the news release was issued. A week later a Sunday morning headline reported the case of leprosy prior to my having said anything to my friend the city hall reporter and I was much disappointed. I reminded him that he had promised to hold this release and he smiled and told me that the case, after the diagnosis was confirmed, had automatically appeared in the statistical table which had reached the press *from my office* with the usual *Saturday Letter to the Mayor*. So you see the routine nature of this particular weekly news release is better even than the Health Department from which it comes and this incident has given us a good deal of comfort by way of assurance that no important health information is

likely to be withheld from the public.

There are many types of newspaper articles that have resulted from the *Saturday Letter to the Mayor* based upon statistical material and accompanying educational information. Food poisoning outbreaks, lead poisoning incidents, care in the handling of crabmeat and the necessity for the "pasteurizing" or reheating of custard-filled pastries have all been reflected in the public press in our community and in many instances directly because of the *Saturday Letter to the Mayor*. On the other hand, special items of public health interest, with educational information spread not too thickly, as in a sandwich, are given to the city editor over the telephone or by written individual or weekly or monthly news releases. Some of these result from our Tuesday morning radio broadcast or the periodic monthly appearance of *Baltimore Health News*. The broadcasts are always under the joint auspices of the City Health Department and the State Medical Society, known in our state as the Medical and Chirurgical Faculty of Maryland.

It has been learned by experience that an extensive scrapbook and clipping book is of the utmost value if kept over the years, and our file of *Saturday Letters to the Mayor* is constantly in use as source material in health education.

In this discussion no effort has been made to cover the assigned topic in any complete manner. Rather I have sought to present for your consideration a particular routine procedure, aimed at making use of local vital statistics in a basic health education program, a procedure which has more than proved its usefulness in my own community.

The School Nurse as a Health Educator*

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SCHOOLS are basically educational agencies. If the purpose of all education is to help each individual to acquire the intelligent art of living fully and well, then whatever health work is sponsored by a school system should be of an educational nature. Such education will fail to function unless the principles presented to the learner are accepted by him as important to his welfare, and unless he willingly puts what he accepts into use. Functional education is one of the slowest processes known and frequently health workers grow impatient. They then turn to peddling out service or resort to coercion to accomplish the results they are seeking.

If we were to analyze the factors which are important to health, almost at once we would note the environment as one of the most important. The child at school, as well as the child at home, must depend upon the adults in his home and community to provide the type of environment in which he can best grow. The child has very little influence over his mode and place of living, so in spite of what the school teaches him about environment, he must still depend upon those older than himself to provide the material needs of his life. The school can first provide within the school the best physical environment possible and then teach both children and adults of the community what constitutes a satisfactory environment and how improvements can be made. The school has no coercive rights to force changes in modes of living. Palliative measures will not, in the long run, pay such dividends as will the slower processes of real education.

Another factor in the child's life which most of us concede as of vital importance to him, and upon which most of our present health education has been based, is the group of so-called health habits. Habitual health practices tend to develop in proportion to the adequacy of the equipment provided, sympathetic encouragement for, and the amount of insistance upon regular performance of a given task. Again, the adult is responsible for these and, at best, the school can only assume its responsibility for seeing that those health practices which need to be followed by the child while in school are followed, and to give a limited amount of information to the child about health behavior. To overstress health teaching when health promoting practices are impossible, more frequently than not, re-

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sults in a negative reaction to the whole régime. In the course of a 9th grade boys' hygiene class, one lad made a remark that his mother would like to feed the family correctly. He said that she read menus and then realized she could not afford the foods mentioned. The boy was frankly discouraged.

A third factor brings us to the area of much confusion in thinking and, therefore, to much disagreement in policy. This consists of the prevention and correction of defects, infections, and sources of strain. Certainly, in the face of the present national dilemma on medical care, few would dare to express an opinion as to what the school will be asked to assume in its future health program. Personally I hope that the schools may be asked to keep their activities within the original bounds of education. I am not suggesting that the schools take a side in the controversy but as resources and new avenues for additional health care are developed through other community agencies, the schools shall teach people how to make use of these facilities.

Health education is, at best, only partially successful unless the end result of the health program is a satisfactory emotional attitude of the individual toward his limitations as well as toward the potential abilities placed upon him by heredity and environment. This may be termed mental hygiene if you wish. The school should recognize that there is a great problem in an individual's adjustment to an unpredictable social environment. School people are too prone to think that wonders can be accomplished in the 6 hours of the school day. I am not so optimistic. What happens during the other 18 hours of the day may enhance or undo the work of the school. This depends upon the degree of functional education the school has been able to accomplish not only with the child but with the adults who manage the child's world.

THE CONTRIBUTION OF THE SCHOOL NURSE TO THE SCHOOL HEALTH PROGRAM

Usually about the only full-time health worker found in schools is the school nurse. Her 3 years of basic hospital training is apt to have made her a follower instead of a leader, hence her advanced preparation must offset this psychological attitude. Upon entering school work many nurses feel inferior to the teachers in spite of the nurses' superior knowledge as to what makes for health. The nurse has already, or soon learns, the technics of measurements which are used in determining some of the aspects of health. These include sight and hearing tests, weighing and measuring, and the technics of recording her own or the physician's findings of the deviations from normal body structure. She also has learned how to do a good job of taking care of the children and frequently finds it easier to take care of the child herself than to teach someone else to do it. Too frequently she is unwilling to let neglect exact its just toll. She fears the danger to life. However, one might well ask what happens to the child during the other 18 hours of the day outside of the school, unless the child or his parent knows what to do. Experience under guidance is an excellent teacher.

A school health program based on health education needs personnel prepared to see in their work many educational possibilities. A big problem of a school system, which desires to base its health program on education, is to find a nurse prepared not only in the routine work as given above but who can also measure up to the following standards:

1. The nurse shall be able to evaluate the educational assets and weaknesses of each of the routine procedures which she is required to do. For instance, she shall see the educational meaning when she weighs a group

of children, or the educational handicap of the deaf child.

2. The nurse shall know what community resources are available which, if put to proper use, may make the life of those with whom she deals more worth while.

3. The nurse shall know how to compile her records in such a way that the community shall know the health needs and status of the school population. She shall know how to teach key people about what she has found and how this knowledge may be used most wisely.

4. The nurse shall know when to shed responsibility on to the shoulders of its rightful owner. She is not a prop but a guide to a more self-sufficient life.

5. The nurse shall know how to make each contact with a child, a teacher, or a parent of real value, in that the individual feels better able to cope with the situation should it again occur.

6. The nurse shall evaluate all she does as to its real worth, eliminating all "busy work" done to fill in time and tending to pad reports, and shall create, when necessary, new and better ways of doing her work.

In conclusion, a nurse with certain routine duties to perform will produce findings which should be of real value to somebody else in the school system. The findings themselves are valueless until someone uses them. The nurse is responsible for finding that which is good or bad as it relates to health, but the changes necessary for betterment are usually the responsibility of somebody else. The nurse is a health educator only when she can get others to assume their responsibilities.

Balancing Our Health Budget

"In connection with balancing the budget, Mr. Chairman, I hope that this Congress will give more attention to balancing our health budget. It is cheaper to keep a woman from dying in childbirth than to take care of the orphans in an orphan asylum or to give aid to the dependent children. It is cheaper to aid in building tuberculosis sanatoriums than it is to pay for the death from tuberculosis and the widows and children who are left. The State Health Officer of Tennessee estimates that it costs on the average of $150 to bury a person in Tennessee, and on that basis it is costing that state more to bury people dying from tuberculosis than for its entire health program, including tuberculosis and all the other diseases."—Testimony before the Subcommittee of the Committee on Education and Labor of the United States Senate, by Dr. Thomas Parran, Surgeon General, U.S.P.H.S.

Industry's Challenge to the Nurse*

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TO improve and preserve the health of the industrial worker to the extent that more complete happiness and greater individual productive capacity shall be possible—this is the challenge of industry to the nurse.

Because we are workers in the health industry, we first view the humanitarian aspect of this challenge.

There are approximately 40,000,000 industrial workers in the United States to be kept in a state of health to make possible a maintenance of living standards which will be a contribution to American society.[1] The nurse is in a strategic position to aid in the improvement and preservation of high health standards of all fellow employees and their families. How can she help?

I. By educational programs on health and safety, in order to prevent disease and injury. This program would include: mass meetings on health problems, and work with safety engineer and committees.

Literature and posters on health questions distributed to individuals, posted on bulletin boards, available in reading rooms and hospital waiting room, enclosed in pay envelopes.

Instruction and demonstrations in homes at every opportunity on questions of health, sanitation, hygiene.

II. By contacts in the homes she has unlimited opportunity to give helpful advice, establish good will and aid in adjusting social problems.

1. She may be responsible for getting the doctor on a personal case before it is too late.

2. She will assist in securing aid, if needed, by reference to proper agencies, and see that the employee understands functions of community agencies.

3. The nurse's opinion may be valued highly by employees; for to them she is more than a professional person, she is, by her closer association with them, more of a friend. They trust her judgment and may rely more on her advice than any other, therefore, she must be worthy.

III. The coöperation of industrial medical units with city and state health department programs and their interpretation to the management will be an aid to improvement of health standards. In this, as in all activities, the nurse acts as an aid to the physician and must keep herself informed. Where there is no full-time physician, it may be necessary for her to interpret these programs.

IV. By helping to make the plant a more healthful place in which to work.

By plant sanitation inspections or by assisting in them and recommendations to improve sanitation (lighting, ventilation, dust control, cleanliness and elimination of all unsanitary conditions), the nurse will help to make the environment in which workers spend at least 8 hours a day, a contributing factor to better health and, consequently, better workmanship.

V. By instituting recreational programs where there are none, not only the physical but the mental health is given a boost. Clean recreation at the plant develops interest in clean recreation outside, and so keeps minds and bodies on that higher level.

VI. Probably the most important factor in building health is to know the actual physical state of the people in your plant. This is possible only by physical examination preemployment, and at least annually thereafter, supplemented by follow-up work on recommendations made by the doctor, and by constant observation and complete records kept

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by the nurse on all corrections and additional defects discovered between examining periods.

The nurse must be able to show a worker the advantages and the returns on his investment in good health. She must, among other things, be a good saleswoman. To do this she must be a shining example and a firm believer in the thing she is selling. She must also be patient, encouraging, and persevering when trying to accomplish 100 per cent correction of physical defects.

VII. The nurse may be the go-between in rehabilitation for injured or ill workmen. With the plant physician, the personnel director, and the foreman, she aids in properly placing returned workers, both to the satisfaction of employee and employer.

ECONOMIC CONSIDERATION

The nurse is ever alert to the interest of her patients. The industrial nurse is a specialist in the field of nursing. She has not only a duty to the employee from a humanitarian standpoint, but the challenge of industry has an economic consideration.

Much of the absenteeism in industry is preventable. Knowing this is a challenge to industrial doctors and nurses. We have tangible objectives toward which our efforts must be directed.

Absenteeism must be reduced. It is expensive and inconvenient to both employer and employee.

Injury—The nurse can decrease absence due to injury; first, by putting forth her best effort in teaching, interpreting, and selling safety. Thus prevention in injury is a big factor. By coöperation with management, personnel director, and safety director, she can do much to aid in prevention.

Taking minor accident histories, recommending corrections in plant conditions, if at fault, will prevent further accidents. A good nurse may have a greater influence on the worker while treating an injury, by advising and teaching safety at that particular time, than anyone in the entire organization.

Another phase of prevention is of course the proper technical knowledge used in treatment of injuries to prevent infection and speed recovery. Enough cannot be said here on this important subject. Every nurse recognizes the importance of proper first aid treatment under standing orders of the plant physician. Thus the severity rate can be decreased.

The nurse must be able to show the management the importance of immediate treatment of all injuries, regardless of severity, by either the *doctor or nurse* and not by fellow employees or outsiders. Disastrous results will accrue if such practices are permitted, whereas if proper immediate treatment is insisted upon, the company will benefit in decreased compensation and absenteeism, and the employee need not suffer unnecessary pain, permanent disability and loss of time.

Occupational Disease—Absence due to occupational disease is a problem every nurse must face. Here as before her first duty is prevention.

In the *Industrial Nursing News Letter*, August, 1938, the following statement was made: "Every nurse, in addition to caring for sick and injured workers, has the golden opportunity of observing conditions in the making which affect their health. If management is not informed of the hazards, whose fault is it?"[2]

There is a challenge!

By plant inspections the alert nurse will recognize, investigate, and recommend correction of many hazards before they have had the time to affect health. We cannot always hope to recognize such hazards, so we must be good observers and case finders. Early case finding and reporting to the plant doctor is a step toward early recovery and prevention of additional cases. This responsibility lies with the nurse.

The kinds of occupational disease reported vary in different states, due to type of industry prevalent in that area.

Also in some states certain occupational diseases are not compensable, therefore, it is impossible to make a definite statement as to that class of diseases which is most frequent. However, we know that occupational disease accounts for ½ per cent to 2 per cent of all disabilities from industrial causes. Those ranking among the highest in a study of the States of New York and Ohio are dermatitis, tenosynovitis, and lead poisoning.[3]

Illness—According to a limited study made by the American College of Surgeons, in which 116 companies from various parts of the United States, employing 352,591 workers, reported in 1936 that the average worker loses 15 times as much time from non-industrial injuries and illnesses as he does from industrial injuries. Therefore we are compelled to direct every effort toward controlling disease due to non-industrial causes.

The relative frequency of diseases among 105,072 male industrial employees, in a study by the U. S. Public Health Service, 1921–1927, shows respiratory diseases 41.8 per cent. Next in rank are digestive diseases, external causes, circulatory and genitourinary, rheumatism, nervous system, skin, organs of locomotion, and epidemic and endemic diseases.[4]

In considering nursing activity to control this absenteeism, we again say prevention comes first.

Primarily maintenance of high health standards and immunization are the two leading factors in preventing disease.

Industry may not sponsor immunization programs, but by coöperating with health departments, an industrial nurse may by advice and encouragement be influential in promoting the individual immunizations needed.

Plant sanitation and teaching of health habits will aid in control of contagion and infection. This should affect that respiratory disease rate.

Early case finding, reference to a physician, and isolation of suspected contagions should speed recovery of any case and prevent transmission of infectious diseases. Industry expects the nurse working in the plant to be capable of observing and properly disposing of cases, to minimize transmission of infections and loss of time.

Supervision of care in the home of either injury or illness cuts absenteeism. Improvement in medical science and hospital care has reduced hospitalization period one-half in the last two decades.[5] Why then cannot scientific care in the home reduce the period of absenteeism? We know that it can.

DEBITS AND CREDITS

The doctor and nurse are those chiefly responsible for the state of employees' health. Plant sanitation, home hygiene, correction of physical defects, proper recreation, proper placement in consideration of physical ability—all these are their activities toward the goal of better health and greater production.

The benefits accruing from these activities are sometimes intangibles that cannot accurately be converted into material values. We believe that they are desirable dividends and worthy of their cost. We must prove them to be so.

According to the American College of Surgeons the smaller the plant the greater per capita medical and compensation costs (60 per cent greater in small plant). Small plants are usually lacking in proper health preservation measures. There is no regular physician but usually one on call only.[6] The nurse in this type of plant is responsible for cutting cost. She can institute, with the advice of the physician on call, a health program with preservation measures, just as any public health nurse can do. She can in-

terpret plant sanitation to employees. If there is no doctor or sanitation engineer, she may make minor plant inspections, sell management on physical examinations, teach safety and health, do follow-up work on recommendations on doctor's examination, make home visits supervising care and teaching health and home hygiene, and keep informed upon and practice proper care of injury and illness, keep records for management showing actual dividends in health and decreased absenteeism, if not in actual dollars and cents, making them realize that it is cheaper to pay for preventive measures through organized and efficient medical and safety service, than for emergency repair service and compensation.

PREPARATION AND QUALIFICATIONS

In conclusion, the natural questions are "Are we prepared?" and "What qualifications must we have to consider meeting the challenge of industry?"

As stated by Ernest Augustus, Safety Director, The Mead Corporation, Chillicothe, Ohio, some of the necessary personality qualifications of an industrial nurse are:

> Courtesy and a sympathetic attitude toward others; being neat, clean, and attractive in her personal appearance and dress; having tact and diplomacy; sincerity of purpose; good health; dependability; far-sighted vision, and ability to plan ahead; sound judgment; initiative and originality; industriousness; loyalty; supervisory ability and willingness to coöperate with others; a sense of absolute fairness in all things; coolness in times of emergency; a good common sense knowledge of human nature and how to handle people; a pleasant voice and a kindly smile for all alike; the rare ability to be a good listener; adequate technical knowledge and ability in her profession; impeccable moral habits; and a sincere personal interest in other people.[7]

PROFESSIONAL QUALIFICATIONS AND PREPARATION

First she should be a registered nurse, with at least a high school education; be an interested member of the Alumna, State, and National Nursing organizations. If unsupervised by a public health nurse, she should have had some postgraduate work in public health, specializing in industry. She should have had some supervised experience in community public health nursing. She must know her community health agencies, and work with them. She must attend meetings of all professional organizations.

A nurse with these qualifications can hope to justify the expenditure of time and money, the trust and confidence placed in her when she takes a position and accepts the challenge of industry.

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Newer Concepts and Procedures of Maternal Care*

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GOOD maternal care demands that the health and life of the expectant mother be preserved and that a child shall be born alive and capable of continued normal extrauterine existence.

That such care is not generally available to the mothers and babies of this country is a fact which is accepted by all who have studied the situation. The important thing now is to determine an intelligent course of action within the means at our disposal and embodying methods which have already proved their value, but one that looks toward continuously improved facilities in communities not properly equipped at present.

Good maternal care consists of good prenatal care *plus* skilled medical and nursing care during delivery and the puerperium, and has social and economic aspects as well as those that are strictly medical.

The value of prenatal care as an essential element in good maternal care has been increasingly appreciated since 1858 when the first prenatal clinic was established by accident at the Dublin Maternity Hospital because expectant mothers were required to report early in pregnancy in order to insure themselves a bed in the hospital for confinement.[1] It was at this time that first general use was made of the discovery some years previously that the appearance of albumin in the urine was associated with the toxemias. Because these women with toxemias were treated early, there were fewer deaths from eclampsia.

Since that time the practice of prenatal care has been influenced by innumerable advances in every field of medicine, but here as everywhere there has been a distressing lag between discovery and application. For instance, the significance of blood pressure determinations in pregnancy, though recognized as early as 1894, is still apparently not appreciated by many physicians who care for pregnant women.

According to recent studies there is still only a small percentage of expectant mothers who receive any kind of prenatal care,[2, 3] and an even smaller percentage who receive what can be considered good prenatal care.[4]

Death rates from toxemias of pregnancy decreased 37 per cent between the years 1930 and 1936 in this country. The increased practice of prenatal care is credited for this. But deaths from this cause still constitute 23 per cent of all maternal deaths, second only to sepsis.

Undoubtedly the lives that have been saved by good prenatal care thus far are only an indication of what can be

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expected by a much more widespread application of a higher quality of care. In view of recent observations, there is good reason to believe that not only deaths from eclampsia but also a considerable share of those due to other causes could be prevented by much better prenatal care than has been generally available in the past, and by reduction in the number of abortions.

The direct bearing of nutritional status, of focal infection, of glandular imbalances, of such diseases as tuberculosis, heart disease, and nephritis, on puerperal mortality, have been subjects of much study in recent years and must be taken into consideration in any appraisal of the value of prenatal care.

The importance of the nutritional status of the pregnant woman is receiving more recognition than ever before. There is no denying the fact that a woman who is in good nutritional condition is better able to withstand the demands of pregnancy and labor. Some very significant observations on the effect of supplementing the diets during pregnancy have been reported recently, particularly in Great Britain. In 1934 in the Rhondda Urban District in Wales, the puerperal death rate, despite the *usual* prenatal care, had failed to decrease and, as an experiment, supplemental food was provided in addition to the usual care given in the prenatal clinics. I quote from the *Report of the British Health Services*[5]:

> The puerperal death rate among the 10,384 expectant mothers who received extra nutrition from January 1, 1935, to July 30, 1937, was 1.64 per 1,000 total births, whereas among the 18,854 other cases in the same area the puerperal death rate was 6.15. The stillbirth and neonatal death rate among the cases assisted in 1937 was nearly 50 per cent less than that among the other cases in the same area. Other factors such as failure to attend antenatal clinics may explain a part, but certainly not the whole, of this difference.

The results of these studies are worthy of serious consideration. As a result, in England, Wales, and Scotland, the majority of maternity and child welfare authorities are now supplying milk to expectant and nursing mothers attending clinics.

Recently attention has been focused on the etiological relationship of low protein diets to the toxemies of pregnancy.[6, 7] This factor is of special importance in certain sections of the southern parts of the United States. The relationship of salt intake to the toxemias is also being restudied.[8] Likewise the effect of vitamin and mineral intake on the health of the expectant mother and her baby are being given more consideration of late, as is the prevention of anemias of pregnancy by proper regulation of the diet.

Focal infection during pregnancy is receiving more attention because in the opinion of a number of observers there is a relationship between focal infection and sepsis, kidney infections, toxemias, and abortion.[9, 10, 11]

An appraisal of the pregnant woman's endocrine system is necessary to safeguard the health of the mother and the baby. Thyroid dyscrasia is a recognized factor in habitual abortions.[9]

A serological test for the presence of syphilis early in pregnancy is now a routine procedure in good prenatal care.

Tuberculosis, heart disease, and nephritis all contribute substantially to the numbers of puerperal deaths, and a reduction of these deaths demands early diagnosis and intelligent management —a responsibility which must be assumed by the physician and nurse as part of prenatal care.

In order to make sure that the best type of prenatal care is given in clinics that are being established, careful supervision of the medical services must be provided by physicians who have specialized in obstetrics. It is encouraging to note that, of the 38 states which have set up prenatal clinics as a part of the maternal and child health

program under the Social Security Act, 25 have employed obstetricians either full-time or part-time on their staffs to give supervisory and consultation services in the maternity program. A number of states have established technical committees composed of practising obstetricians and pediatricians to help by formulating standards of maternity care and care of new-born infants.

Many of the states that are developing nutrition programs are providing nutrition services at the prenatal clinics; likewise, a few states are providing dental services at the clinics, and one state reports that tuberculin tests are being done routinely in the prenatal clinics. Wassermann tests are being done routinely in the prenatal clinics in 33 states.

In addition to the best possible type of medical care, we must recognize that in the areas where the best results have been obtained, as shown by a marked reduction in puerperal deaths, the public health nursing service has also been good. It is the public health nurse who is largely responsible for getting the women under medical care in the first place, seeing to it through home visits that they understand how to carry out the treatment ordered by the doctor, who is on the alert for danger symptoms, who sees that the patients remain under medical care. Without these services the mere setting up of a prenatal clinic is practically useless. Efficient public health nursing service makes the prenatal clinic work and get results.

CARE AT TIME OF DELIVERY

About half of the puerperal deaths are due to causes incident to labor and delivery. The provision for safe care at delivery is essential to the demands of good maternal care and whether the delivery occurs in the hospital or the home, skilled medical and nursing care must be provided. In 1936, approximately half of the two million live births occurred in rural areas and 86 per cent of these births were reported as occurring in the home. In addition, 29 per cent of the live births in urban areas occurred in homes, making a total of a million and a quarter live births which occurred in homes. The problem of providing good medical and nursing care for these mothers and babies when the delivery takes place in the home offers special difficulties which are now more than ever before calling for solution.

A planned home delivery in competent hands may be safe for both mother and baby. By "planned" I mean that the patient has been under prenatal supervision and is known not to have any complications which contraindicate a home delivery, and preparations for the delivery have been made with the aid of a nurse. By "competent hands" I mean a conscientious physician who knows when he needs the consultation service of an obstetrician or pediatrician and where to obtain it, and a nurse who is skilled in obstetric nursing and nursing care of the new-born.

It is recognized for all primiparae, and in certain complications and emergencies, delivery care in a well staffed and equipped hospital is essential and every effort should be made to arrange it before labor begins. Wherever home deliveries are done, access to the facilities of a well equipped and well staffed hospital with readily available consultants within reasonable distance is essential if these lives are to be saved.

In 83 counties in 27 states, delivery nursing service for patients delivered in their homes by physicians has been organized. According to preliminary progress reports, there has been a substantial increase in the number of services during the past year. Methods are being worked out and it is hoped in time such service will become available in a much larger area.

This discussion has dealt largely with

the problem of care of the woman to be delivered in the home because the need to improve this care is so great and so pressing. Ideally, however, care in a well staffed, well equipped hospital should be available to all women for delivery, but obviously it will be some time before such facilities can be provided. Moreover, unfortunately, there exist today altogether too many hospitals or maternity homes where skilled consultation service is not made available, where operative procedures are undertaken without previous obstetric consultation, where equipment for good obstetric care is inadequate or lacking, where isolation facilities for the septic woman or infected infant are not provided, where highly skilled nursing care for mother and infant are not available. If the deliveries are to be increased either in existing hospitals or in new ones, as indeed seems desirable, it is imperative that responsible public authorities establish and maintain, with the advice of qualified specialists in the fields of obstetrics and pediatrics, standards of hospital care that will insure a high degree of safety for mother and infant.

The opportunity to raise standards of care either for hospital or home delivery lies increasingly in the hands of state health department officials who are responsible for maternal and child health programs.

The matter of providing obstetric and pediatric consultation services for general practitioners is receiving increasingly greater attention by the state health departments. In one state, such services are available on a state-wide basis. Though most of the projects now in force cover only a limited territory, a variety of methods are being explored with a view to determining the most practical for use under different conditions. Eighteen states employ obstetricians or pediatricians on a full-time salary basis for this purpose; in 22 states consultants are employed on a part-time basis, and in 4 states specialists may be called for consultation from an approved list by general practitioners and payment made on a case basis.

Just as we have to devise ways in which to deal with the problem of home delivery intelligently, we must face the problem of the untrained midwife and deal energetically and intelligently with it. In 1936, nearly a quarter of a million deliveries were attended by midwives or other non-professional persons. In 1938, 34 states report approximately 35,000 midwives practising. Twenty-eight state health departments now have assumed responsibility for supervising their midwives, and approximately 23,000 are so supervised. Some states are requiring that all midwives' patients attend prenatal clinics.

In Tift County, Ga., the local health department in coöperation with the State Division of Child Hygiene has set up a program which illustrates many of the features which I have mentioned. In this county, both the infant and maternal mortality rates have been high, and 42 per cent of the births have been attended by midwives. Prenatal and postnatal clinics, directed by an obstetrician on the health department staff, have been established at strategic points to give care to all patients of midwives and to patients of physicians if they desire it. A complete program of midwife control, instruction, and supervision is being developed. The obstetrician is available for delivery of all midwife cases deviating from normal and is also available for consultation to physicians on request. Home delivery nursing service is available to physicians conducting home deliveries. Services of local registered nurses at the time of delivery are utilized to supplement the health department nursing staff. Sterile packs are provided for the use of physicians in home deliveries and certain sterile sup-

plies are provided for the use of midwives. Patients requiring hospital delivery are cared for at hospitals through funds made available for this purpose by the county. Programs such as this are pointing the way for fulfillment of the demands for good maternal care for the mothers and babies of the United States.

No discussion of the subject of maternal care is complete without mention of the problem of abortion which is responsible for 20 per cent of puerperal deaths and gives indication of being on the increase. Nothing less than a concerted drive by health and welfare authorities, the medical profession, and the public working together by every means at their disposal will effect any reduction in the deaths due to this cause.

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Epidemiology of Syphilis in New York City*

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NO phase of syphilis control is of greater interest to the health officer than its epidemic manifestations. Epidemiology has been defined as "the study of disease as a mass phenomenon." [1] The concept of epidemiology in relation to syphilis has been broadened in recent years to include a consideration of the factors concerned with the transmission and means of prevention of spread of this disease in the community.

It has long been recognized that syphilis spreads in epidemic form. To quote Parran,[2] "Syphilis is an epidemic disease. It is kept alive, and spreads in the population by a series of small epidemics." One of the earliest accounts of an epidemic of syphilis in this country is that related by Governor John Winthrop [3] who described an outbreak of syphilis which occurred in Boston in 1646:

"*1646:* There fell out also a loathesome disease at Boston which raised a scandal upon the town and country, though without just cause. One of the town ( ) having gone cooper in a ship into ( ), at his return, his wife was infected with lues venerea which appeared thus: being delivered of a child, and nothing then appearing, but the midwife, a skillful woman, finding her body as sound as any other, after her delivery, she had a sore breast, whereupon divers neighbors resorting to her, some of them drew her breast, and others suffered their children to draw her, and others let her child suck them (no such disease being suspected by any), by occasion whereof about 16 persons, men, women and children, were infected, whereby it came at length to be discovered by such in the town as had skill in physic and surgery, but there was not any in the Country who had been practiced in that cure. But (see the good providence of God) at that very season there came by accident a young surgeon out of the West Indies, who had had experience of the right way of the cure of that disease. He took them in hand, and through the Lord's blessing recovered them all ( ) in a short time. And it was observed that although many did eat and drink and lodge in bed with those who were infected and had sores, etc., yet none took it of them, but by copulation or sucking. It was very doubtful how this disease came at first. The magistrates examined the husband and wife, but could find no dishonesty in either, nor any probable occasion how they could take it by any other, (and the husband was found to be free of it.) So it was concluded by some that the woman was infected by the mixture of so many spirits of men and women as drew her breast (for thence it began.) But this is a question to be decided by physicians."

A little more than a century later (1759) Voltaire in his immortal *Candide,* relates the story of Pangloss's infection. With astonishing prescience the droll fellow traces most

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accurately the source of his own disease through nine or ten individuals, back to one of the companions of Christopher Columbus.

Contributions to the public health literature on the practical epidemiology of syphilis are all of comparatively recent date. The venereal disease control program has given full recognition to the great importance of epidemiologic work in the control of the disease. Munson [4, 5] reported a series of localized outbreaks of syphilis in rural areas in upstate New York and demonstrated the practicability of epidemiologic investigation, terming his method "sole-leather epidemiology."

Smith and Brumfield [6, 7] described excellent examples of investigation of syphilis patients in a southern rural community. They emphasized the paramount rôle of the physician in such investigations; because of the intimate relationships between physician and patient during the course of routine history taking and physical examination, an unequalled opportunity is provided for the establishment of complete confidence in the doctor.

It is possible that the above reports may have given rise to the conclusion that it is impossible to track down similar outbreaks in large cities, because of the obvious differences in population and locale. Experience in New York City as shown here and elsewhere [8] indicates that with careful and intensive application of direct epidemiological procedures, this type of work is also possible in a metropolis. Moreover, it has been shown conclusively [9] that epidemiological methods of investigation are applicable to syphilis patients in private as well as clinic practice.

Ingraham [10] outlines the technic of approaching the patient for information as to source and contacts and stresses the superiority of the persuasive method of approach over that of coercion. Similarly, suspected contacts submit to examination, and to treatment when infected, more readily when persuasion has been employed than where compulsion has been practised.

Kulcher and Ninnis [11] have described a coördinated police and social service system of case investigation at the syphilis clinic of Stanford University School of Medicine. Under this system, sources of infection, contacts and patients lapsing treatment, who have been reported to the San Francisco Department of Public Health, are investigated jointly by an un-uniformed police inspector and a social service worker. Statistics are given showing the effectiveness of this method. The authors claim that the combined method of police and social service investigation is more effective than either one when used alone.

SYPHILIS IN NEW YORK CITY

Morbidity reports do not present a true picture of the syphilis problem in New York City. However, such information as is available is of interest to the epidemiologist because it indicates prevalence and distribution of this disease in the community.

Syphilis in New York City occurs endemically with a tendency to spread in localized outbreaks. It has been conservatively estimated from a census study [12, 13] that the prevalence rate of syphilis in New York City is about 5 per cent of the total population, with 58.5 per cent among men and 41.5 per cent among women. It is worthy of note that the number of early cases, as shown by this study constituted about 17 per cent of the total number of cases reported under treatment.

A study of reported cases of syphilis by age distribution [14] showed that 52 per cent of the total number occurred in the age group 18–35, with the highest peak (20.22 per cent) in the age group 24–29.

Available reports indicate that an average of 6.5 per cent of pregnant women [15] in the United States are infected with syphilis in one form or another, and that about 2 per cent of the child population are victims of congenital syphilis.[16] It is felt that the same rates probably prevail in New York City.

PROCEDURES IN CASE INVESTIGATION

Health officers agree that syphilis can be eradicated by organized efforts at discovering and treating infected individuals. The first step in any effective case finding machinery is the prompt and complete reporting of every diagnosed case of syphilis. Reports of laboratory examinations for syphilis are no longer accepted as case reports by the New York City Department of Health.

The Sanitary Code requires physicians, hospitals, and clinics to report to the Department of Health the full name, or initials, and address, sex, age, and occupation of every person infected with syphilis. Provision is made on the report form for the inclusion of information regarding the duration of the disease and the identity of the source of infection. U. S. Public Health Service penalty envelopes are provided for this purpose by the Bureau of Social Hygiene and require no postage.

Practical experience in New York City has shown that the application of direct epidemiological procedures to cases of early syphilis is the most effective means of discovering new foci of infection. Each infected person uncovered as a result of proper investigation and brought under treatment is a check on the further spread of the disease.

Each case of early syphilis is personally interviewed by an epidemiologist or the social worker, for the purpose of ascertaining primarily the identity of the person from whom he may have contracted the disease, and the identity of individuals to whom he may have transmitted his infection. An attempt is first made to secure the examination of sexual partners, and the immediate family and household contacts, through the effort of the patient himself. More often, however, visits are made by the investigator to induce the suspected source and contacts to submit to examination and to treatment, if found infected. They are advised to go to a private physician or referred to a hospital or the nearest health department clinic, if unable to pay for private medical services. Household or family contacts are frequently examined at home, if they are unable to report to the clinic at stated hours.

If the patient fears to have the nature of his disease revealed to his family, he will usually coöperate in securing the examination of the family contacts on some pretext, such as life insurance purposes, or a periodic check-up of the general health.

If the person sought is not at home, a discreetly worded note in a plain sealed envelope, properly addressed, is left on the premises urging the respective individual to report to the office of the epidemiologist at specified hours for an interview. If there is no response to this request, a strongly worded special delivery or registered letter is sent.

Usually by persuasive means, it has been possible to gain the confidence and coöperation of all concerned and to induce the suspected source of infection and contacts to submit to examination and treatment, if needed. In every instance, the patient and his contacts are assured that their identities will not be revealed in the investigation, and that the information given by them will be held strictly confidential.

The same procedures apply to all cases of early or infectious syphilis in

the course of epidemiological investigation, whether referred by private physicians, health department clinics, non-departmental clinics and hospitals, or out-of-town official agencies. In the follow-up of patients referred by private physicians, workers invariably represent themselves as coming from the physician. One of the most important functions of the epidemiologists of the Bureau of Social Hygiene is to visit the physician in his office, to establish cordial relations, acquaint him with the program and services rendered him by the Department of Health, act in a consultative capacity, and, in general, advise and guide him on venereal disease problems. Frequently the epidemiologist will interview the patient in the physician's office, being introduced sometimes as a representative of the Department of Health, and more often as an interested professional colleague.

The staff engaged in these activities consists of 5 medical epidemiologists and 2 male investigators, under the supervision of an assistant director in charge of epidemiology, and 8 public health nurses, acting as nurse epidemiologists, 2 medical social workers, and 35 investigators and field workers, functioning under an assistant director in charge of nursing and social work.

Where infection of a person in New York City is stated to have occurred out-of-town, information regarding the suspected source of infection is reported to the health authorities of the city or town where infection is alleged to have taken place. In cases where it is believed that prostitution is carried on, such information is referred to the police authorities.

An important case finding procedure in New York City is carried on in relation to vagrants and sex offenders. All sex offenders, including those arrested on charges of prostitution, are required to be examined for venereal disease under the New York State Public Health Law. This offers an excellent opportunity for the discovery of cases of syphilis. As one would expect, the incidence of syphilis in this group is very high.

During the year 1936, 3,804 women were examined in the health department diagnostic clinic at the House of Detention for Women. Twenty-two per cent were found to have syphilis, 23 per cent were found to have gonorrhea, and 13 per cent were found to have both syphilis and gonorrhea. Of the total number examined, 58 per cent were found to have one or both of these diseases.

In 1937, 4,254 women were examined in the health department clinic at the House of Detention—23 per cent were found to have syphilis, 35 per cent gonorrhea, and 10 per cent both syphilis and gonorrhea. Of the total number, 68 per cent were found to have one or both of these diseases. Under the Public Health Law cited above all persons arrested and arraigned on charges of vagrancy and prostitution are reported to the Department of Health and examined for evidence of venereal disease. Such persons may be detained until the results of these examinations are known. Persons with infectious syphilis are removed by the Department of Health to a quarantine hospital and held there until rendered non-infectious. In every instance the infected individual is interviewed by a nurse from the department for purposes of instruction and to secure information on sources of infection and contacts.

Two recently enacted laws in New York State are worthy of note in connection with the epidemiology of syphilis. The prenatal examination law provides that every physician attending a pregnant woman during gestation shall take or cause to be taken a specimen of her blood at the time of first examination, and submit it to an approved laboratory for a standard sero-

logical test for syphilis. The premarital examination law requires that prospective brides and bridegrooms must each obtain a medical certificate, based on a physical examination and a standard serological blood test, stating that they are free from syphilis, or, if infected, not in a stage which may become communicable, before they are granted a marriage license. The examination and blood test must be made within 20 days before receiving such license. The enactment of these two new progressive public health laws,

FIGURE I

CITY OF NEW YORK - DEPARTMENT OF HEALTH - BUREAU OF SOCIAL HYGIENE

EPIDEMIOLOGICAL INVESTIGATION FORM

PATIENT'S NAME _____ AGE ___ SEX M. F. COLOR W. C. MARITAL STATUS S. M. W. D. Case No.

Address _____ Occupation and Place of Employment _____

Referred by: _____ Date _____ Reason _____

First Symptom and Date of Onset: _____ Symptoms in Sequence and Dates _____

PHYSICAL EXAMINATION: DATE

Type and Location of Lesions

ADMISSION DIAGNOSIS

LABORATORY TESTS		
Type	Date	Result
Darkfield		
Wassermann		
Smear		
Frei		
Other		

POSSIBLE SOURCES OF INFECTION

	Name and Address	Age Sex Color	Occupation and Place of Employment	Date and Type of Exposure	EXAMINATION Date	Physical: Type and Location of Lesions	Laboratory
1.							
2.							
3.							

SEX CONTACTS OF PATIENT FOLLOWING INFECTION

1.							
2.							
3.							

ESTABLISHED SOURCE OF INFECTION

HOUSEHOLD AND FAMILY CONTACTS OF PATIENT:

	NAME	AGE	SEX	RELATIONSHIP	EXAMINATION Date	Physical: Type & Location of Lesions	Laboratory
1.							
2.							
3.							
4.							
5.							
6.							

HOUSEHOLD AND FAMILY CONTACTS OF THE SOURCE OF INFECTION

1.						
2.						
3.						
4.						
5.						
6.						

MEASURES INSTITUTED

	HOSPITALIZED DATE AND PLACE WHEN RELEASED	ADMITTED TO CLINIC: DATE AND PLACE	UNDER CARE OF PRIVATE PHYSICIAN: NAME AND ADDRESS	UNDER OBSERVATION NAME AND ADDRESS OF CLINIC OR PHYSICIAN
1.				
2.				
3.				

namely, the prenatal and pre-marital examination bills, will also serve as most effective case finding procedures. In New York City each year there are about 100,000 births and 70,000 marriages, which will result, therefore, in the annual serologic examination for syphilis of about 240,000 persons who otherwise might conceivably not be so examined.

No discussion of the epidemiology of syphilis would be complete in itself without a consideration of the facts recorded in the course of case investigation. Detailed record keeping is vitally important in the business of practical epidemiology. The form (Figure I) has been drawn up in an attempt to indicate the course of procedure and essential data to be recorded for a complete epidemiological investigation of a case of early syphilis.

SPECIAL PROBLEMS

Certain difficulties are encountered in New York City in connection with the epidemiological investigation of syphilitic patients. One of the greatest problems is the lack of knowledge on the part of patients regarding the exact identity of the persons from whom they acquired the disease, as clandestine prostitutes and chance pick-ups. The patient may deliberately, or through no fault of his own, furnish the wrong information, resulting in failure to locate the named individual because of a fictitious address. There is, in addition, a large homeless and transient group in the city that is forever on the move; prostitutes will deliberately change quarters when they are being traced.

Some people who have changed residences are frequently located through the use of the mails, usually by a special delivery or a registered letter, marked "return receipt requested," and, in the case of families, through schools, utility companies, or social and welfare agencies. A vast majority of the shifting population, however, leaves no forwarding addresses, either at old premises or with the local post office. As an example of this specific obstacle, of 566 individuals named as possible sources of infection during 1937 and the first three months of 1938, 212, or 37.5 per cent, were not located because of false addresses and frequent removals.

In some of the foreign quarters of the city, language difficulty presents another serious obstacle. While occasionally it is possible to have personnel familiar with the appropriate foreign tongue at certain clinics, this is not always possible.

PROGRESS IN THE FIELD

The following figures, covering the period of the entire year 1937 and the first half of 1938, indicate definite progress in New York City, despite the difficulties enumerated above.

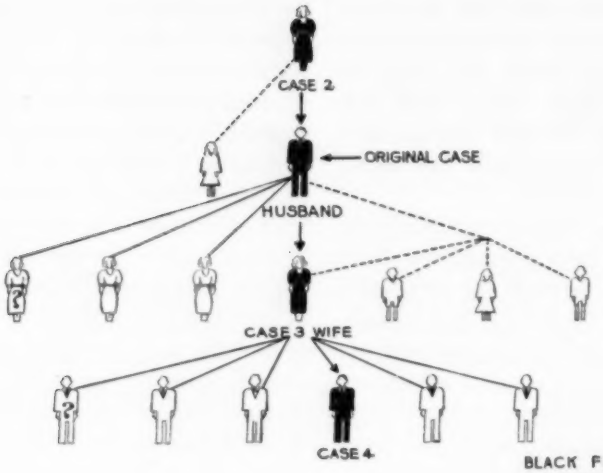
During the period under consideration, a total of 728 persons named as possible sources of infection of patients with early syphilis were investigated by the group of medical epidemiologists —394, or 54 per cent, were examined; 236, or 32 per cent, of those examined were found to be infected. Of 468 household and family contacts to patients with early syphilis named, 424, or 91 per cent, were examined, of whom 81, or 17 per cent, were found to be infected with syphilis.

The group of nurses and social workers followed 2,194 lapsed and delinquent patients, and succeeded in returning 61 per cent of this number to treatment. The home investigators made visits on a total of 25,552 patients and returned 58 per cent of these to treatment.

CASE REPORTS

The practicability of epidemiological

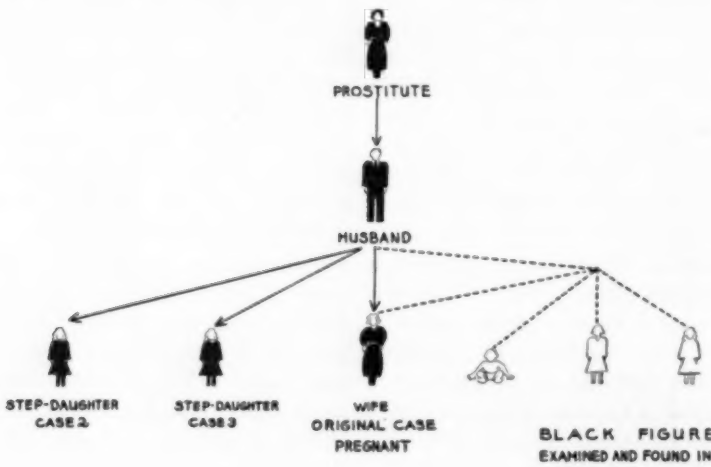
LOCALIZED OUTBREAK OF SYPHILIS



INVESTIGATION **1.**

CASE FINDING IN SYPHILIS

FOUR MEMBERS OF ONE FAMILY FOUND INFECTED



INVESTIGATION **2.**

investigation of syphilis patients in New York City is illustrated by the following case reports:

Investigation 1—J. L., a white man, aged 48, was discovered to have primary syphilis on January 25, 1938. On investigation, it was believed that he had probably acquired his infection from Mrs. H. S., who was found to have early syphilis when she was brought in for examination. In addition to this woman, the patient admitted relations with three other persons, two of whom had no evidence of venereal disease; one could not be located because of false identification. On March 7, 1938, or about 2½ months later, the wife of J. L. developed secondary syphilis. She too proved to be promiscuous and admitted extra-marital sex relations with six men. Two of these were located and examined in New York, and showed no evidence of infection; one could not be found. The other men were examined by the health authorities in a neighboring state, with the result that one was discovered to have a strongly positive serological reaction and was placed under treatment, while the other two were found to be not infected. Four family contacts were examined and showed no signs of venereal disease.

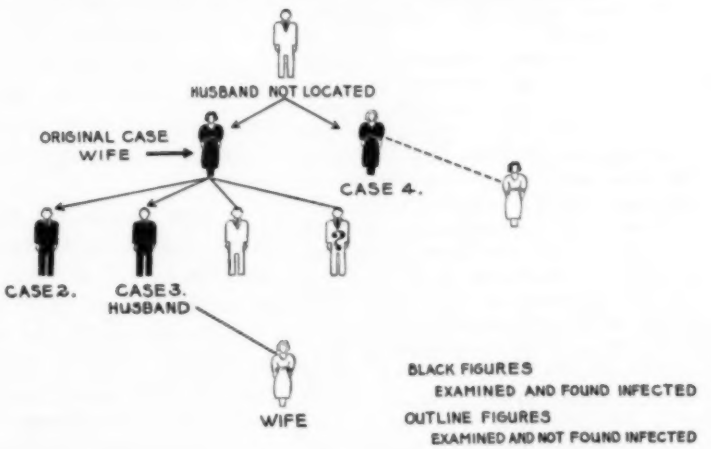
Investigation 2—Mrs. I. S., a white pregnant woman in her 6th month of gestation was found to have secondary syphilis, and gonorrhea, and was placed under medical treatment. At that time her husband refused to be examined, and her four children were found to be negative clinically and serologically. An apparently healthy looking normal baby was born January 2, 1938, with no signs of congenital syphilis or gonorrheal ophthalmia.

Two months later, two of her female children, aged 10 and 12 years respectively, were hospitalized, after being found with active secondary syphilis. The husband and stepfather was then induced to submit to examination and was found to have generalized adenopathy, a penile scar, and a strongly positive serological reaction. He admitted infection by a prostitute about a year previously. It is believed that he had infected his wife and also two of his step-daughters, while his wife was in the hospital for delivery. The four infected members of the family were placed under treatment at one of the health department clinics.

Investigation 3—A colored female, aged 27, was found to have secondary syphilis. She had probably acquired the disease from her husband, who was stated to have been in "ill health" and had left her several months previously, leaving no trace of his whereabouts.

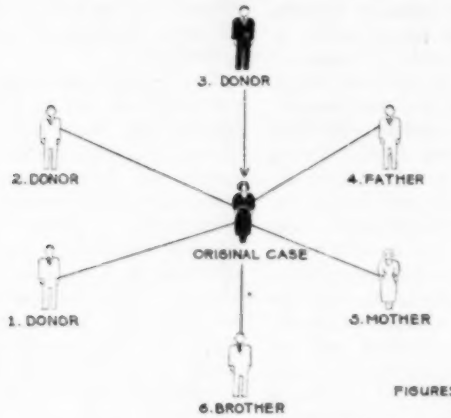
She admitted sexual promiscuity with four men, two of whom were subsequently found to have primary syphilis with penile lesions

SOURCE AND CONTACT TRACING IN EARLY SYPHILIS



INVESTIGATION 3.

TRANSMISSION OF SYPHILIS BY A BLOOD TRANSFUSION



FIGURES 1-3 BLOOD DONORS
4-6 FAMILY CONTACT
BLACK FIGURES, EXAMINED AND FOUND INFECTED
OUTLINE FIGURES, EXAMINED AND NOT FOUND INFECTED

INVESTIGATION 4.

and positive darkfield findings, while one had no evidence of infection, and another one could not be located. The wife of one of the infected men, on repeated follow-up examinations, fortunately has been found free thus far from the signs of syphilis.

During the course of this investigation, another woman appeared at the clinic with a cutaneous syphilide and named the husband of the initial case as the source of her infection. Several attempts to locate this man, both in New York and in a neighboring state, were unsuccessful. All of the four infected individuals have submitted to prescribed courses of treatment.

Investigation 4—Several instances of transfusion syphilis recently occurred in New York City. One of these cases was reported by a private physician in a 9 year old female child. Investigation revealed that the child had had three blood transfusions because of a streptococcal infection following a mastoidectomy about 3 months previously. None of the donors had had his blood tested for syphilis prior to transfusion, in spite of the fact that the regulations of the Sanitary Code require this of all professional donors.

With the consent of the coöperating physician, six persons, including the blood donors and the immediate family, were thoroughly examined. The last donor was found to have a strongly positive Wassermann reaction, and was considered to be the source of infection.

The responsibility of preventing transfusion syphilis is a weighty problem in itself, and rests with the physician making the transfusion. All authorities agree that in order to reduce the risk of infection in the recipient, a rapid and reliable serologic test, as well as careful physical examination, should be performed on every donor immediately prior to transfusion.

CONCLUSIONS

1. Investigation of patients with early syphilis has been found effective in New York City, despite the problems presented by fictitious address, constant migration, and language difficulties.

2. The search for sources of infection, and contact tracing is equally possible in private practice as well as in clinic and hospital practice.

3. Reduction in the syphilis rate will be accomplished by intelligent application of well established principles of practical epidemiology, together with the coöperation of the physician in practice. Emphasis is laid upon the personal interest and activity of the

individual investigator in contradistinction to such indirect methods of approach as the use of the mails, and messages transmitted by patients to contacts and suspected sources of infection.

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OUR PUBLIC HEALTH SERVICE

ON the first day of July, 1939, the United States Public Health Service was officially removed from the Treasury Department, in which it was born and in which it has spent its entire life up to that date—nearly 141 years—to the Federal Security Agency, created under the "Reorganization Act of 1939," approved April 3, 1939, and which by joint resolution of the House and Senate became effective July 1, 1939.

The Service had its origin July 16, 1798, when President John Adams signed the Act of Congress which provided for hospitals for the medical care of American seamen. The first hospital for disabled seamen was established by Virginia at Washington, Norfolk County, Va., under a legislative act in 1782, and this hospital became the first actually provided under the Federal Act of 1798 establishing the Marine Hospital Service, having been purchased by the Government in 1801. However, the first treatment of seamen under that Act took place at Boston in 1799.

The public health functions of the Service grew slowly. It was not until 1878 that Congress authorized extensive use of the Service as a federal health organization. In 1890 it was authorized specifically to assist in preventing the introduction of cholera, yellow fever, smallpox, and plague. In 1893, the quarantine functions of the Service were extended to include all infectious and contagious diseases, in coöperation with state and local health agencies.

Other public health functions were added from time to time, and this expansion was recognized in 1902, when the name was changed to United States Public Health and Marine Hospital Service, under which it remained until 1912, when the title under which it is now known was given.

In 1901, the founding of the Hygienic Laboratory was authorized for investigation of contagious diseases and other matters pertaining to public health, and the next year, 1902, the Service was charged with the duty of supervising and regulating the manufacture and sale of sera, vaccines, and similar products shipped in interstate commerce. In 1912, the duties of research were greatly broadened,

taking in the investigation of all diseases of man and the conditions tending to influence their propagation and spread, including sanitation and sewage and the pollution of navigable streams and lakes. Our National Leprosarium at Carville, La., was established in 1917. During the same year the Service became responsible for the physical and mental examinations of all arriving aliens.

The Narcotics Division, renamed Division of Mental Hygiene, was created in 1929, with hospitals at Lexington, Ky., and Fort Worth, Tex., for the confinement and treatment of narcotic addicts, and in 1930 a hospital was established at Springfield, Mo., for defective delinquents.

An important advance came this year (1930) in the creation of the National Institute of Health, which succeeded the Hygienic Laboratory, with very broad duties and powers of investigation.

In 1918, Congress created the Division of Venereal Diseases, with power to coöperate with state departments of health for the control and prevention of these diseases. These activities have been greatly extended by an Act of 1938.

The Social Security Act, approved 1935, imposed on the Service the duty of assisting states and districts to establish adequate health organizations and to train personnel. The National Cancer Act, approved 1937, established the National Cancer Institute, with wide duties of investigation and research as well as treatment, and also the assisting of similar activities by other agencies, public and private.

This sketch will give some idea of the multifarious duties and responsibilities of our Public Health Service, which touch every part of our country and affect the welfare of every individual citizen. It goes without saying that much has been omitted. Nothing has been said, for example, of the emergency demands on the Service, such as the care of sick and disabled soldiers, sailors, and marines after the World War for three years, until the Veterans' Bureau was organized. The location of the Marine Hospital Service in the Treasury Department was logical at the time it was founded. The Treasury was the department concerned with commerce and the revenue cutters early took part in the enforcement of state quarantine laws. As the functions of the Service broadened and it was growing into a national health organization its position in the chief fiscal agency of the Government became more and more anomalous. Proposals to move it have been made frequently.

Many have felt that the importance of the health of the Nation entitled it to a seat in the Cabinet and not so long ago strenuous efforts, which looked as though they might be successful, were made to bring this about. Other plans have died a more or less lingering death and the Service has remained in the house in which it was born until now.

Under the Treasury the Service has fared well. Successive administrations, regardless of their political complexion, have realized the necessity of supporting health work liberally, and, what is equally important, of allowing the officers of the Service a free hand in the planning and execution of their duties. A few exceptions to this rule have occurred, but even when an active Christian Scientist was Director of the Budget, no important injury was inflicted.

The continuous growth of the Service and the position it now occupies show that it has been well taken care of, and further, that it has commended itself to the Nation through effective work.

In the Federal Security Agency are grouped a number of agencies having to do with the health and welfare of the people. The association with these should

be helpful and mutually beneficial. We have every reason to expect for our Public Health Service liberal support, and from it a continuation of the activities which have made it known as one of the strongest governmental health organizations in the world.

SHOULD PUBLIC HEALTH BE ADMINISTERED BY THE COURTS?

PUBLIC health officials who have been attempting to discharge their duties conscientiously and impartially are sometimes distressed to find themselves confronted with indictments or injunction proceedings. Defenses against these legal actions not only may raise unwarranted doubts as to the integrity or ability of the health officer, but they are time-consuming, may interfere with the proper conduct of official duties, and are often unnecessarily expensive.

Several such incidents have recently occurred. The health officer of a large eastern city was indicted for alleged criminal action in permitting a nuisance due to dumping operations supervised by another department of the city. The health officer of a large mid-western city was among the many defendants in an indictment for an alleged conspiracy to violate the federal anti-trust laws, as claimed by the government to apply to the distribution of market milk.

An indictment is, of course, merely a charge, which must be proved in court to be sustained. It does not necessarily mean guilt, and the defendant health officers in these cases were vindicated, temporarily at least, when the indictments were dismissed by the courts. Many persons believe, moreover, that both of these indictments were inspired by political rather than by strictly legal motives, although on that matter we express no opinion.

Public health administration is primarily the responsibility of the executive branch of the government, as represented in this instance by the health department. When legitimately conducted, such administration deserves a minimum of interference from the judiciary.

Under the American system of government, however, every individual is properly entitled to his day in court in order to secure justice and to right any legal wrongs actually done to him. While the courts always have been liberal in upholding as valid all lawful and reasonable actions of public health officials, they have been equally alert to restrain health officers whose procedures have been unreasonable, arbitrary, oppressive, capricious, or malicious.[1] For wrongful acts, beyond the scope of his authority, any health officer in this country or in Canada may be liable in a civil or even in a criminal action brought against him by an individual citizen or by the government.

The most competent health official is, generally speaking, one who can perform his duties with a minimum of litigation, either by or against him. There are, nevertheless, occasions when court action is necessary as a last resort. For such occasions, the sagacious health official will be amply prepared by his conduct and by his familiarity with legal principles applicable to public health, to prosecute or defend his cause with success and credit to himself and his community.

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"IMPLEMENTING PUBLIC HEALTH"

ENGLAND, from which the awakening in public health matters came nearly 100 years ago, now announces another step forward in the appointment of a Committee on Research in Preventive Medicine.[1] With the announcement, however, there is a somewhat pessimistic note in certain journals. Twenty-five years ago in this country a noted student of public health said that if what we knew at that time could be translated into action, properly supported by laws and money, the death rate could be greatly reduced practically at once. Somewhat the same statement has been made over and over again with a great degree of truth. There is always a lag between discoveries in medicine and their practical application. The statement is made that in England in no field of medicine is this lag more evident than in public health. To a great extent this is true of America.

Immunization against diphtheria is given as an instance of one of the immediate problems which the committee has to consider. In spite of the proved efficacy of our preventive inoculations against diphtheria there is great difficulty in persuading the mass of people to have their children protected, and the rather astonishing statement is made for England that "the mortality-rate for diphtheria remains unaltered." Further, there is no town in England with an inoculation rate higher than 20 per cent and the protective injections are given chiefly between the ages of 5 and 10 years, while the greatest mortality in diphtheria is from 1 to 3. This pessimistic statement seems to contrast with the situation in America.

Each year there is a survey of the situation in regard to diphtheria which is published in the *J.A.M.A.* The cities of the country are divided into sections in which of course the incidence of diphtheria as well as the death rate varies somewhat. The latest report [2] covers 93 cities with an aggregate population of 38,885,435, in which there were 568 deaths, a rate of 1.46. Of these 93 cities, in 1935, 19 had a death rate of 5.0 or over. In 1936, 5 cities were in this class, and in 1937, only 3. In 20, the year passed without a single death from diphtheria. It is true that the actual number of deaths from diphtheria decreased only by 9, from 577 to 568, while the population increased from 36,777,112 to 38,169,704. These surveys began in 1923, in which year in an urban population of 31,060,848 the death rate per 100,000 was 13.13 against 1.46 in 1937 for 38,169,704 population.

The report says that there seems to be an increase in death rates which cannot be attributed wholly to the lack of intensive immunization programs, but it is concluded that there is evidence the extensive preventive program which has been carried on so widely throughout this country has resulted in a lowered death rate from diphtheria.

Our English friends suggest that the only proper way to test the efficiency of preventive inoculations is to select one city in which at least 90 per cent of its children on reaching the age of 12 months will be inoculated. This must be done with the collaboration of practising physicians and with the entire confidence of the medical profession and of the public. The suggestion is made that the new committee might very well attempt to discover an atmosphere in which such an experiment could be successfully put through in the ordinary routine of public health practice.

The make-up of the committee is interesting. It contains man with special knowledge in many branches of medical sciences, others whose lives have been

spent in public health administration. It includes members of the medical staff of the official health ministries of England and Scotland. The names of many of the committee are almost as well known in America as they are in England. The personnel assures us of a well considered and practical program which will be carried out with thoroughness. We can depend on findings through which England once again will demonstrate to the world her advanced conception of public health.

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Tenth Annual Meeting of the Western Branch

THE Western Branch of the American Public Health Association held its 10th Annual Meeting July 23–28 in Oakland, Calif., under the presidency of Guy S. Millberry, D.D.S., of San Francisco. This first branch of the Association was organized in 1928 and affiliated with the parent association in 1930, with membership from 11 western states, 3 western provinces of the Dominion, as well as from Alaska, Hawaii, and the Philippine Islands. The meeting proved to be a notable occasion, not only because of an excellent program but in attendance as well. More than 700 persons registered for the meetings, or practically as many as attended the meeting of the A.P.H.A. in Pasadena 5 years ago. During the same week the Sixth Pacific Science Congress met in the Bay District, and there were more than 100 papers dealing with medical and public health subjects besides those regularly scheduled for the Western Branch.

The meetings of related groups were unusually fruitful and these included a dental congress, a conference of state supervising nurses, a round table of state and local registrars of vital statistics, meetings of the staff of the U. S. Indian Service, of nutritionists, of state and local venereal disease directors, and a round table of state sanitary engineers.

Although several important reports were presented bearing on public health problems of particular interest to the western area, the most noteworthy event was without doubt the symposium on Health Education, under the chairmanship of Professor Ira V. Hiscock of Yale University. This symposium ran through 4 half-day sessions and included the participation of numerous specialized consultants. There were also round tables on the evaluation of administrative practices and on maternal and neonatal care. More than a decade of industrious work on the part of our western colleagues has resulted in a splendid organization whose fruits are readily apparent. The Branch installed Dr. Frederick D. Stricker of Oregon as President, and recognized the long service of Dr. William P. Shepard of San Francisco as Secretary by unanimously electing him President-elect. Dr. W. Ford Higby of San Francisco succeeds Dr. Shepard in the post as Secretary.

BOOKS AND REPORTS

Robert **Koch: Sa Vie et son Oeuvre**—*By Dr. Emile Lagrange. Paris: M. Legrand (Boulevard St-Germain,* 93), 1939. 90 pp. Price, $.50.

The author deplores the fact that outside of Germany there is no adequate biography of Robert Koch, although everyone knows of the tubercle bacillus, the comma bacillus of cholera, and what is known as Koch's phenomenon. In English, except for the short article by Nuttall, one of a series on German bacteriologists, the only mention of Koch is in *Microbe Hunters,* by De Kruif, which he describes as a "clever but whimsical essay."

In a book on Koch's work one naturally turns to tuberculosis. From this we find an almost complete absence of knowledge of American work. The author speaks of Koch's blunder at the London Congress on Tuberculosis in 1901, mentions the disagreement with his stand by Lord Lister, Nocard, Bang, and McFadyean, but does not mention the American, the only person who gave facts to disprove Koch's statement; nor does he seem to have heard of the final proof given the next year (1902) of the communicability of the bovine tubercle bacillus to human beings. Again we must point out that this was American work done at the University of Pennsylvania. It has stood the test of time and has been corroborated in every country. There is no excuse for this omission by the author. He gives credit properly to Theobald Smith for having pointed out the differences between the human and the bovine bacillus before Koch, but his acquaintance with the American literature concerning tuberculosis seems to end there. The author says 15 years before, but this is an error. (See *Trans. Assn. Amer. Physicians,* XI (1896) 75.) Elsewhere in speaking of the researches of Koch on malaria, he gives Theobald Smith credit for having been the first to have shown the transmission of disease by the bite of an insect, but he neglects to give equal credit to Kilborne, who did the work conjointly with Smith.

The author goes into the personal life of Koch and tells about his divorce and later marriage to an actress in Berlin. He also gives some incidents which are not generally known. For example, in speaking of anthrax, he says Koch tried to take credit away from Pasteur, although Pasteur had with absolute courtesy given full credit to Koch for what he had done. In spite of this, in Geneva, Pasteur was acclaimed as a second Jenner. He says that Koch was so jealous that the honors done Pasteur "prevented Koch from sleeping."

With the exception of more or less unimportant matters such as those mentioned, the book contains nothing new. The last two pages give an impartial comparison of Pasteur and Koch, especially in regard to what they accomplished. He places them along side of Ampere, Faraday, J.-B. Dumas, Darwin, Lister, Laennec, Bernard, and Virchow, and ends by saying that on account of their services to humanity they assuredly occupy the first place and due to their genius the sciences of hygiene and modern medicine were born.

For some years past the Europeans

have recognized American work. We cannot but think that the author of this work is very much behind the times and would profit by studying American literature. He signs himself as an inspector in hygiene in the Ministry of Public Health in Brussels. Entirely apart from the diseases, the elucidation of which brought such deserved fame to Koch and Pasteur, the author could learn a great deal from American literature concerning the general handling of all matters concerning hygiene and public health. Otherwise the book can be recommended for pleasant reading.

MAZŸCK P. RAVENEL

League of Nations—Survey of National Nutrition Policies, 1937–38—*New York: Columbia University Press,* 1939. 120 pp. Price, $.60.

The Assembly of the League of Nations in 1937 began a movement which was designed to further the study of "the state of national nutrition and to improve nutritional standards," proposing at the same time that a meeting of the National Nutrition Committees be held annually.

Reports given to the Assembly by representatives of the National Nutrition Committees from 16 countries furnish the basis of the material incorporated in this book, in which a mass of facts of interest to the layman as well as to the nutrition specialist are presented in a summarized, easily readable form.

The survey includes: A report of the progress of the work of the League in regard to nutrition problems; a discussion of the type of work delegated to the National Nutrition Committees, the power of the committees, and sources of financial support for carrying out investigations; suitable methods for making nutrition surveys, in twenty countries, concerning the nutrition of the inhabitants; methods used in various countries to alleviate existing conditions of under-nutrition; a discussion of economic situations in relation to nutrition; a report of special research problems on the vitamin and chemical composition of foods, and methods available for educating the public in regard to the underlying principles of proper nutrition.

All reports indicate (as is to be expected) that the plane of nutrition of the group is directly related to the level of the income. In addition such factors as: climatic and topographic conditions; types of soil, and amount per capita accessible for the production of food materials; transportation, care in handling and methods of preserving food; an understanding of the principles of nutrition and a knowledge of wise spending of the income, all have an important bearing on the problem of proper human nutrition.

ADELIA WEIS

A Synopsis of Hygiene—*By Sir W. Wilson Jameson, M.D., and G. S. Parkinson, with a Section on Personal Hygiene by G. P. Crowden (6th ed.). London: J. & A. Churchill, Ltd.,* 1939. 687 pp. Price, $6.25.

From the first edition of this book which appeared in 1920 until the sixth in 1939, it has always been of the highest quality and practically beyond criticism as judged by the claims of the authors. We learn from the Preface to this edition that the sections dealing with occupation and health, hospitals, maternal welfare, and milk have been completely recast, and that the law relating to food and drugs and to factories has been restated owing to recent legislation. The book is largely a synopsis of current public health administrative practice based on official reports and memoranda which are cited in the text, generally with the date. There are, however, further references to original sources which one may consult.

The book has been brought up to date, as shown by the inclusion of material concerning the legislation as to Public Health (Aircraft) Regulations, 1938.

The one criticism which might be made is the small amount of space given to insects which carry disease, a trifle over 7 pages, with only one illustration. One could wish also, though this is not a criticism, that the authors could have given us more of their own ideas and not stuck quite so closely to their expressed purpose to "present so far as possible only official or generally accepted views."

One cannot study a book of this sort without learning a great deal and acquiring admiration for the careful and methodical way in which the material is presented. It is more a book for public health workers and students than medical students. Its usefulness for this country is somewhat limited by the fact that all of the current references are to British laws, regulations, reports, etc. We could wish that someone would do for America and American laws regarding public health what the authors have done for England. All through, abbreviations, of which the English are very fond but which are not understood in this country, are used, though a list of them is given at the beginning of the book.

It is hard to speak too highly of this work, in spite of the drawbacks mentioned as far as use in America goes. The printing and make-up are excellent and there is a good index. Only 16 illustrations are given.

MAZŸCK P. RAVENEL

Taking Care of the Family's Health: A Teaching Guide for Rural Classes—*By Elma Rood and Gertrude Lingham. Madison College, Tenn.: Rural Press,* 1938. 3 parts in 2 books. 597 pp. Price, $5.00; flexible fabrikoid, $6.50.

These two volumes may be classed as a manual designed to give practical teaching help to persons in the public health field. Sixteen instructional units are organized under three headings: (1) The Family in Health, (2) The Family in Illness, and (3) The Family and Public Health.

Many practical ideas adapted to rural conditions are given, but one wonders if suggestions for several types of approaches dependent on needs and interests might be more helpful than considerable detail on teaching technics. Values of several good illustrations would have been increased by the use of descriptive titles. However, the activities proposed are excellent and the subjects of the units are well chosen, being topics especially appropriate for rural groups. Procedures are suggested for class periods and opportunity is given for the imaginative nurse or teacher to use her own initiative in the adaptation of material. The price of these volumes may limit their use.

IRA V. HISCOCK

Hereditary and Environmental Factors in the Causation of Manic-Depressive Psychoses and Dementia Praecox—*By Horatio M. Pollock, Benjamin Malzberg, and Raymond G. Fuller. Utica, N. Y.: State Hospitals Press,* 1939. 473 pp. Price, $2.50.

The importance of research into the etiological factors of mental disease is yearly receiving greater recognition. This volume, dealing with hereditary and environmental factors in two of the most important groups of the functional psychoses is one of the series of research studies undertaken jointly in 1928 by the New York State Department of Mental Hygiene and the State Charities Aid Association, with the financial assistance of the Laura Spelman Rockefeller Memorial.

The method employed in this study was to examine in detail the family and

environmental history of two groups of patients with mental disease. One group consisted of 155 first admissions with manic-depressive psychoses, and the other of 175 first admissions with dementia praecox. A study of the family histories of these two groups showed that in both cases there was more mental disease in these families than is to be expected in a corresponding random sample of the general population. However, in neither case was it possible to show that Mendelism explained the transmission of manic-depressive psychosis or dementia praecox.

The authors draw the conclusion that "It (mental disease) requires something in addition to a diathesis or predisposition. There must not only be a seed but a ground in which to plant the seed. Inferior human stock may still be enabled, through proper nurture, to achieve a life of a fair degree of usefulness. On the other hand, we know that even the soundest of stock may succumb to the repeated onslaught of an unfavorable environment."

Although the study only confirms the views generally held rather than shedding new light in the approach to the problem of preventing the occurrence of mental disease, the authors are to be congratulated on their work in applying statistical methods to such a difficult field in a manner that allows for definite conclusions.

The book is readable, is well printed, and should receive a warm reception from all interested in the progress of mental hygiene from its present status to one in which prevention of mental disease will take its proper place.

GRANT FLEMING

Toxicity of Industrial Solvents: Summaries of Published Work—*Compiled by Ethel Browning under the direction of the Committee on the Toxicity of Industrial Solvents. Medical Research Council, Industrial Health Research Board Report No. 80. New York: Chemical Publishing Co. of New York, Inc., 1938 (1st American ed., by permission of His Majesty's Stationery Office, London).* 388 pp. Price, $3.50.

This is a very valuable book, thorough, careful, up-to-date, and readable. The claim that it consists of summaries of published articles, is far too modest, as it is a critical evaluation of those articles. When an author fails to present sufficient data to support his theses, when conclusions are drawn but the bases therefor are not given, that fact is stated. The critical attitude is maintained throughout, although expressed with due brevity. For instance, the views of Duvoir and of Flury and Zernik concerning chronic intoxication in man through petroleum spirits are given, but with the comment that no authority for the statements appears and even the exact variety of petroleum distillate is not given. The articles reviewed cover the period up to December, 1935, with a few of later date. The chapters on coal tar distillates and on the chloro compounds were of special interest to the reviewer and in her treatment of controversial features in those fields the compiler displays a very intelligent neutrality. The contents include (I) The Hydrocarbons, (II) The Chloro Compounds, (III) The Alcohols, (IV) The Esters, (V) The Cyclohexane Derivatives, (VI) The Ketones, (VII) The Glycol Group, (VIII) Miscellaneous: Carbon Disulfide. Ethyl Ether. Iso-Propyl Ether. Pyridin.

A full bibliography is given at the end of each chapter and there is a very satisfactory index.

ALICE HAMILTON

Alcohol: One Man's Meat—*By Edward A. Strecker and Francis T. Chambers. New York: Macmillan,* 1938. 230 pp. Price, $2.50.

Alcoholism and mental disease are age-old twins. Together they present a problem that has baffled social and medical efforts from time immemorial. But science, taking up the challenge, is throwing new light on some of its physical and mental aspects. It has, for example, demonstrated that alcohol is a narcotic drug, not a stimulant, and it has shown the relationship between alcoholism and vitamin B_1 and C deficiency on the one hand, and injury to the nervous system on the other, a relationship of far-reaching social and psychiatric importance. And this advancing knowledge offers a basis for the rising hope that the drinking problem, in some of its forms at least, will progressively yield to therapy and prevention.

The book under review is an unusually valuable contribution toward a better understanding, by the layman and student, of the fundamentals of a social evil that has been the despair of reformers for centuries. It lights up the psychological, physiological, and social factors that are at the basis of the drinking habit and clarifies the problem considerably; and by its reporting of the impressive results secured by the authors in their treatment of certain types of alcoholics, through "an intensive psychological reëducational approach," shows the possibilities of dealing constructively with the problem.

The authors differentiate between the "normal" and the "abnormal" drinker, and describe drinkers who have a "psychic allergy" to alcohol, in contrast to those who "can take it." Allergic individuals, they say, simply and sensibly, "should never drink alcohol, for even when they take it in relatively small quantities they are not normal drinkers." One man's meat is, indeed, another man's poison. The abnormal drinker, on the other hand, whether allergic or not, is the man who cannot face reality without alcohol, but "whose adequate adjustment to reality is impossible as long as he uses alcohol." These are the excessive drinkers, to whom alcohol is a mechanism of escape, a release from inhibitions, the magic that brings euphoria and anesthesia. Here the impulse to intoxication is rooted in the conflict between instinct and ideal, and alcohol is the great solvent, the treacherous boon to man's ego.

In this interesting and highly readable treatise we are given an instructive, scientific, and practically useful interpretation and evaluation of the why's and wherefore's of drinking and of the psychiatric approach to its management and control. Of special value is its hopefulness of outlook which should do much to encourage the provision of institutional and clinical facilities, now all too meager, for the special study and treatment of alcoholic addiction. Best of all is the sound philosophy of the book which points the sober attitude, the middle road we should take between the extremes represented by prohibition on the one hand and the night-club era on the other. Education for temperance is the ultimate, rational answer.

PAUL O. KOMORA

The Microbe Man: A Life of Pasteur for Young People—*By Eleanor Doorly. New York: Appleton-Century,* 1939. 160 pp. Price, $1.50.

Of the many ardent Pasteurians, quite a number shared their enthusiasm by writing books about Pasteur. These books differ more in style and garb than they do in subject matter for the standard work of Rene Vallery-Radot, *La Vie de Pasteur,* is available to all with itching pens.

The author's approach is that of an imaginative tourist. She visited the many places made famous by this great man, all faithfully. Thereafter she returned to her home in England, where she is a school teacher who graduated

into head mistress, and wrote another book about Pasteur.

Her presentation is for young readers. Herself a teacher, Miss Doorly's book has a smooth flow presenting the essential facts of Pasteur's life within reach of a child's vocabulary and interest.

The book is embellished by an introduction by Professor Pasteur Vallery-Radot. W. W. PETER

The Canned Food Reference Manual—*New York: American Can Company,* 1939. 242 pp. From the Company.

This booklet is a striking example of enlightened advertising. When we consider the enormous part which the art of canning plays in the preservation of food and in our everyday life it is of great importance that the public should have correct information concerning the processes involved as well as the general effect on the foods preserved in this manner.

This book is the third of the series issued by the American Can Company and has been prepared to amplify and extend rather than to replace the publications which have preceded it. After a short history of canning there are accounts of the processes involved in canning, beginning with the manufacture of tin plate, fabrication of cans, and going through to the selection of foods and the basic operations through which they are put, ending with the heating and subsequent cooling.

The next section treats of canned foods in human nutrition in which are given the nutritive requirements of the body, the story of the vitamins, their standards, units, and stability. The public health aspects of canned foods are discussed, and an account given of 20 years of research concerning canning. One section is largely practical and gives the government regulations concerning processed or packaged foods, their specifications and grades, while the last section gives the Federal Food, Drug, and Cosmetic Act.

There is an Appendix carrying 23 items, all of them practical and useful in everyday life, not only to the housekeeper but also to the physician and the nutrition expert. A good index ends the book. The work is thoroughly documented and the material has been submitted to the Council on Foods of the A.M.A. for review and acceptance before publication. The illustrations are abundant and excellent.

MAZŸCK P. RAVENEL

Immunity Principles and Application in Medicine and Public Health—*By Hans Zinsser, John F. Enders, and LeRoy D. Fothergill (5th ed. of "Resistance to Infectious Diseases"). New York: Macmillan,* 1939. 782 pp. Price, $6.50.

The material is divided into two sections, one devoted to principles and theory and the second to special immunological problems in individual infections.

Four chapters give critical discussions of infection, virulence, antigens, toxins, and immunity, six chapters deal with the nature of antibodies and various antigen-antibody reactions such as toxin-antitoxin, bactericidal, agglutination, precipitation, iso-antibodies and blood groups. Five chapters are devoted to hypersensitiveness. Section II deals with immunity to virus and allied diseases, immunity in syphilis, tuberculosis, diphtheria, tetanus, and other anaerobic infections, scarlet fever and other streptococcal infections, staphylococcal infections, meningitis, pneumonia, the enteric infections, and whooping cough. Three chapters are devoted to applied immunology in bacterial and virus diseases, and in snake-bite poisoning.

The authors say they have "attempted to retain much of the character

of the previous editions and to meet the need for increased correlation between the principles revealed in laboratories and their applications to the problems of the clinic and of public health." They are to be congratulated on the success they have achieved in attaining their goals. The arrangement of subject matter has been distinctly improved.

There are a few places where some ambiguity may exist relative to a few fundamental concepts. This is illustrated by the attempt, on page 374, to modernize the old definition of an antigen by saying "a rational comprehension of immunological processes necessitates an inclusion in the biological conception of antigenic substances *all materials* which, in contact with the animal body, lead to a specifically altered reaction capacity." That the authors do not regard formaldehyde, iodine, etc., as true or complete antigens is indicated by earlier discussions and on pages 376 and 377. Likewise the statement (pages 445 and 446) that "there is evidence to indicate that there is *no* stable union between virus and antibody, etc." and that "Enders and Shaffer have carried out experiments with pneumococcus and pneumococcus antibodies which both in principle and results, are entirely analogous to the virus-antibody 'dilution' phenomena of Schultz and Andrews." It is doubtful whether the authors wish to claim that in general bacterial antibody does not form a fairly firm union with its antigen or that complete dissociation of any bacterial antibody from its homologous antigen can be readily obtained by dilution as might be inferred from these and a few succeeding paragraphs.

On scarlet fever the reviewer is left with the impression that while the authors are apparently in agreement that the erythrogenic toxins are responsible for the rash and certain other phenomena yet perhaps in spite of the apparent positive stand taken, they are either in doubt or in disagreement as to whether the etiology is settled in its entirety.

Some apparent inaccuracies or inadequacies in references to the literature occur. On page 340 a translation of Morgenroth's "Collected Studies in Immunity" is quoted to the effect that Magendie's early experiments on anaphylaxis were done on dogs. Richet in his treatise on anaphylaxis and also Doerr in Kraus and Levaditi's Handbuch (p. 858, Band 2, 1909) quote Otto's review of Morgenroth as saying that Magendie used rabbits. The authors (page 353) describe Manwaring's perfusion experiments on dogs and cite his conclusions but omit later work by others which puts a different interpretation upon his results. On page 360 it is stated that Schultz in 1910 showed that smooth muscle from sensitized animals would "react, by contraction, to amounts so small that they had practically no effect upon the normal tissue." Schultz's early experiments were very crude and it was Dale who refined the technic and called attention to the importance of distinguishing toxic from non-toxic doses of antigen in smooth muscle experiments. The citation of Wells (page 363) while correct in so far as it goes is misleading in that it might easily be interpreted as representing Wells's objections to the histamine theory. If ten more lines from Wells's book had been included they would have portrayed accurately his views.

While the book, because of the regrettably short time allotted to immunity in the medical curriculum, is too large to be used as a didactic text and lacks many valuable references it is nevertheless a splendid example of what it is intended to be—a critical treatise expanded to include chapters that correlate the principles revealed in the

laboratories and their application to the problems of the clinic and of public health.

The subject matter is well arranged and does not contain a noteworthy number of typographical errors. While the index is fairly good, it is hardly adequate considering the large amount of material presented. The publishers are to be congratulated upon their achievement.

N. P. SHERWOOD

The Span of Life—*By William Marias Malisoff. Philadelphia: Lippincott,* 1937. 339 pp. Price, $2.50.

The author is a research chemist, inventor, professor in the Graduate School in the University of Pennsylvania, and editor of *Philosophy of Science.* He is eminently qualified to bring together a great variety of interesting things on the subject of the span of life.

Life at its oldest includes the big 12,000 year old macrozamia tree in Queensland and small organisms revived by surviving Russian scientists after these biological specimens spent from one to 3,000 years in arctic ice. It is easier to determine the approximate age of some of these ancient forms of life than for the human beings who have crept into legends of longevity: Adam, 930 years; Seth, 912; Enos, 905; and Methuselah, 969; or to prove that Methuselah begat children at 187, and Noah at 500. It is a lopsided list of humans for, strangely, no woman is included among the long-livers.

The author reviews a wide assortment of theories as to what determines longevity, ranging from popular hokus-pokus involving palm readers and astrologers to the more elaborate theories constituting the pitfalls of scientists. Systolic blood pressure, weight, aortic and radial pulse, calcium content of the blood, gastric acidity, anatomic changes in the knee joints, structural transformation of the thyroid, are some of these.

Use has been made of laboratory animals in ingenious experiments. Rats and rabbits lost an assortment of their internal organs, had to eat a variety of foods or starve, were controlled in their mating, and the number of days added to or subtracted from their average span of life were determined.

The author quotes definitions of life in terms of chemistry, physics, electricity, and architecture of the atom as advanced by many philosophers and scientists, among them Bichat, who said: "Life consists in the sum of the functions by which death is resisted."

"Apparently the definition and treatment of life varies with the level of discussion the definer has in mind. He may be thinking of the physical level, the biological level, the psychological level, perhaps even the theological level; as he 'raises' the level he is likely to deny that the discussion at other levels is about life altogether." But "all the molds crack; they are too narrow, above all too rigid, for what we try to put into them." About almost every definition one can say, "Yes and more."

Finally the author moves toward one reasonable proposal for belief and action in the form of this thesis, "The hope of prolonging life indefinitely is the proper thing for science. All research should be organized with that as the supreme goal." W. W. PETER

Man Against Himself—*By Karl A. Menninger. New York: Harcourt, Brace,* 1938. 485 pp. Price, $3.75.

The ingenuity and fertility of the Freudian theories in explaining some of the mysteries of human behavior are beautifully exemplified in this second major work of Dr. Karl Menninger, probably the most successful public interpreter of psychoanalysis among its practitioners in this country. The brilliant and dynamic author of *The*

Human Mind, best seller among the many lay treatises on the new psychologies that have appeared during the past decade, again shows his gift for popular exposition, this time in an attempt to elucidate some of the occult psychological mechanisms involved in the "manner of man that kills," in his aggressions toward himself and others. And the upshot of his elaborate thesis, based on Freud's concept of the death instinct, juxtaposed against the instinct of self-preservation, is that man is his own worst enemy, as the title of the book implies.

How the conflict between the destructive and constructive impulses in man takes place, the complexities and ramifications of this morbid phenomenon in human nature, the diversity of its manifestations, and the significance of its outcome for the present and future welfare of the race—such is the subject matter of this analytic and, in a way, novel and daring study of the riddle that is man.

Taking as his point of departure and frame of reference the age-old problem of suicide, which he analyzes in characteristic Freudian fashion, Dr. Menninger builds up a complicated conceptual structure in which he sees asceticism and martyrdom, neurotic invalidism, alcoholic addiction, antisocial behavior and mental disease as so many forms of "chronic," progressive suicide, and this not in a merely analagous sense—in which, for example, we say that people, through dietary indiscretions, "dig their graves with their teeth"—but as the actual result of unconscious motivations based on the self-destructive impulse. Even the aggressions of the habitual criminal "lead to self-destruction in the sense of imprisonment, misery and deprivation."

So pervasive and insidious is the "death instinct" that, in the development of his thesis, the author includes self-mutilation, malingering, polysurgery, purposive accidents, impotence and frigidity—classifying these under the heading of "focal" or localized suicide—and a whole range of physical diseases and disorders—denominating these as "organic" suicide. In the process he dissects, with his analytic knife, many an established ethical, moral and religious concept, showing, as he claims, the psychopathology underlying much in human behavior that masquerades as virtue. The book is replete with interestingly presented and well documented case material illustrating the far reach of his concepts.

How and when the aggressive impulses are thwarted in their overt projections and are turned inward, thus leading to self-destruction, is an obscure and highly complex psychological process that requires studious effort if the reader is to grasp the closely reasoned arguments the author employs so engagingly and with such gusto in defending his thesis. These extensions of the psychoanalytic theory of self-destruction to a variety of problems in human morbidity are not offered as scientifically proven demonstrations, but are rather a compound of clinical observation and philosophic speculation based on Freudian concepts and, in their deductions, highly plausible and tenable, if we accept the basic premise. It is an interesting hypothesis that stands or falls with the body of psychoanalytic doctrine.

PAUL O. KOMORA

BOOKS RECEIVED

TEXTBOOK OF BACTERIOLOGY. By Hans Zinsser and Stanhope Bayne-Jones. 8th ed. New York: Appleton-Century, 1939. 990 pp. Price, $8.00.

PUBLIC WORKS ENGINEERS' YEARBOOK 1939. By American Public Works Association, Chicago, 1939. 457 pp. Price, $3.50.

MEDICOLEGAL PHASES OF OCCUPATIONAL DISEASES. An Outline of Theory and Practice. By C. O. Sappington. Chicago: Industrial Health Book Co., 1939. 405 pp. Price, $2.75.

EDUCATIONAL PSYCHOLOGY. Personality and What Shapes It. By D. W. La Rue. New York: Nelson, 1939. 397 pp. Price, $2.50.

SYPHILIS AND ITS ACCOMPLICES IN MISCHIEF: SOCIETY, THE STATE AND THE PHYSICIAN. By George M. Katsainos. Athens, Greece: Author, 1939. 676 pp. Price, $5.00.

HISTORY OF THE LONDON COUNTY COUNCIL, 1889–1939. By Sir Gwilym Gibbon and Reginald W. Bell. New York: Macmillan, 1939. 696 pp. Price, $7.00.

SYNOPSIS OF PULMONARY TUBERCULOSIS. By Jacob Segal. New York: Oxford, 1939. 150 pp. Price, $2.75.

MAN AGAINST MICROBE. By Joseph W. Bigger. New York: Macmillan, 1939. 304 pp. Price, $2.50.

THE ADMINISTRATION OF OLD AGE ASSISTANCE. By Robert T. Lansdale, Elizabeth Long, Agnes Leisy, and Byron T. Hipple. Chicago: Public Administration Service, 1939. 345 pp. Price, $3.75.

COMMISSION ON NUTRITION IN THE COLONIAL EMPIRE. First Report. Part I. Nutrition in the Colonial Empire. 210 pp. Price, $.90. First Report. Part II. Summary of Information Regarding Nutrition in the Colonial Empire. 145 pp. Price, $.75. London: His Majesty's Stationery Office, 1939.

IMPROVISED EQUIPMENT IN THE HOME CARE OF THE SICK. By Lyla M. Olson. 3d ed. Philadelphia: Saunders, 1939. 264 pp. Price, $1.50.

NUTRITION AND PHYSICAL FITNESS. By L. Jean Bogert. 3d ed. Philadelphia: Saunders, 1939. 602 pp. Price, $3.00.

PNEUMONIA. With Special Reference to Pneumococcus Lobar Pneumonia. By Roderick Heffron. New York: Commonwealth Fund, 1939. 1086 pp. Price, $4.50.

TUBERCULOSIS AND SOCIAL CONDITIONS IN ENGLAND WITH SPECIAL REFERENCE TO YOUNG ADULTS (A Statistical Study). By P. D'Arcy Hart and G. Payling Wright London: National Association for the Prevention of Tuberculosis, 1939. 165 pp. Price, $1.00.

REPORT OF THE WATER POLLUTION RESEARCH BOARD FOR THE YEAR ENDED 30TH JUNE, 1938, WITH REPORT OF THE DIRECTOR OF WATER POLLUTION RESEARCH. London: His Majesty's Stationery Office, 1939. 57 pp. Price, $.30.

EPIDEMIC ENCEPHALITIS. Etiology, Epidemiology, Treatment. Third Report by the Matheson Commission. New York: Columbia University Press, 1939. 493 pp. Price, $3.00.

HEALTH AND PHYSICAL EDUCATION. Class and Record Book. By Hugo Fischer. New York: Barnes, 1939. Price, $.75.

YOUR EXPERIMENT IN LIVING. By Michael A. Cassidy and Helen Gay Pratt. New York: Reynal & Hitchcock, 1939. 153 pp. Price, $1.75.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Health in All New York—Here you will find a stimulating example of descriptive reporting. The true journalist selects some rather bizarre activities from among the wealth of more sober material that so large an organization as the combined New York City health agencies furnishes. The professional health publicist probably would choose otherwise, but we question whether he would be more successful in packing a revealing story in a very small space. One choice sentence: "Public health is separated by a line as theoretical as the Tropic of Capricorn into preventive and curative medicine."

ANON. Health and Hospitals. Fortune 20, 1: 97 (July), 1939.

Our Unenviable Smallpox Record—About 15,000 reported cases of smallpox during 1938 constitute an eloquent testimonial to our collective common sense. New Jersey has not had a case in 7 years. Seven western states with a smaller combined population have had 12,000 cases in the same time. We have not had outbreaks of the virulent type since the middle 20's, but when we do the fat will be in the fire.

ANON. Why Smallpox? Pub. Health Rep. 54, 25: 1091 (June 23), 1939.

Some Health Profits—Of the young men recently called to the British Army only 2.3 per cent were found unfit for military duty. If, as the minister of health suggests, this vastly better showing is the result of the improved health services, there is reason to hope that another generation will be in even better shape, for in 1918 and 1919 when the present crop of recruits were born, infant hygiene and school health services were still in a nebulous state, and the drive for decent housing was a long way from beginning.

ANON. Editorial Notes. J. Roy. San. Inst. 2, 7: 397 (July), 1939.

Canadian Certification of Sanitarians—In Canada, the Public Health Association grants the degree C.S.I. to persons who pass qualifying examinations and present evidence of stipulated standards of training and experience. It is hoped that eventually only C.S.I.'s will be employed by municipal health departments. Is there a hint here for us?

ANON. Report of the Committee on the Certification of Sanitary Inspectors. Canad. Pub. Health J. 30, 6: 309 (June), 1939.

Praise for the Public Health Nurse—Emphasis upon the necessity for a working partnership between nurses and other professional groups in the public health program, marks this plea for more and better public health nursing.

ATWATER, R. M. The Place of the Public Health Nurse in a Community Program. Canad. Pub. Health J. 30, 6: 278 (June), 1939.

Life Expectancy and You—Useful for many purposes is this table of expectation of life comparing rates now and at the time of other "World's Fairs." Not only is the longevity outlook better at birth, but so is the expectancy at older ages. It is only human for any health official to take both interest and pride in this accomplishment.

DUBLIN, L. I. Increasing Life Expectancy. Neighborhood Health (New York City Dept. of Health) 5, 4: 8 (July), 1939.

Quality of Material in Infant Manufacture—Neonatal mortality and stillbirth rates among babies born to mothers who had previously had infant losses were significantly greater than the rates among children of mothers who had not suffered such misfortune. The implications of these findings to agencies giving prenatal care with limited nursing staffs should be evident. There are other social agencies, too, that may well give heed to this phenomenon.

GARDINER, E. M., and YERUSHALMY, J. Familial Susceptibility to Stillbirths and Neonatal Deaths. Am. J. Hyg. 30, 1: 11 (July), 1939.

Is Rheumatism Handed Down?—Evidence is presented which suggests that a hereditary constitution may play a rôle in the predisposition to rheumatic disease, but it cannot exclude the possibility that exposure and infection may be the predominating factors.

GAULD, R. L., *et al.* Further Observations on the Occurrence of Rheumatic Manifestations in the Families of Rheumatic Patients. Milbank Quart. 17, 3: 263 (July), 1939.

One Hundred and Forty-one Years—In this brief history of the Public Health Service you will find some information that you already have and much that you should. As the service passes from the Treasury Department the occasion is used to review the steps by which it grew to its present place of influence.

HAMPTON, B. C. The Public Health Service Leaves the Treasury Department. Pub. Health Rep. 54, 26: 1133 (June 30), 1939.

Thought-Control Clinic — Health officials will be impressed with the group method of treating emotional disorders which has proved its worth in one city dispensary. Individual psychotherapy for the horde of neurotics who need public assistance is entirely beyond the means of any health agency. This is a way out of the dilemma.

HARRIS, H. I. Efficient Psychotherapy for the Large Outpatient Clinic. New Eng. J. Med. 221, 1: 1 (July 6), 1939.

Health Problems in Education—Tentatively proposed, a statement of health policies for school adoption is discussed briefly by a school physician, a physical educator, a practising physician and administrator. This and the accompanying article deserve serious reading. The schools' responsibilities include a healthful environment, care of accidents, control of communicable diseases, teaching health habits, repeated physical examinations, and training of teachers.

HUMPHREY, J. H., *et al.* School Health Problems. J. A. M. A. 113, 1: 63 (June 1), 1939.

Perish the Thought Department—How public health administration works in England is told by the head worker. On paper, the British unified scheme of things sanitary certainly reads better than would a comparable report upon the jumble of agencies and activities hereabouts. That it could possibly be better, no red-blooded, two-fisted, he-American would for a moment admit.

MACNALTY, A. The Health Services of England and Wales. Canad. Pub. H. J. 30, 6: 269 (June), 1939.

Deficiency Diseases and War—Aside from whatever military value it may possess, this paper on the behavior of Republican Spaniards will prove immensely interesting to sanitarians. During the 30 months of air raids, about the same number of Barcelonians were killed by bombs as in street accidents during the same time. It wasn't TNT, but lack of butter, that broke morale. Children were less worried than adults about danger.

MIRA, L. Psychiatric Experience in the Spanish War. Brit. M. J. No. 4093, 1217 (June 17), 1939.

American Legion Child Health Program—" In concluding," concludes this author, " I would like to summon . . . all of those groups definitely interested in the improvement of child health and child life to combine so that their combined influences may eliminate from our American Life disease, ignorance, poverty, propaganda, and politics." That, in a word, is some job.

MITCHELL, E. C. Child Health in National Defense. J. A. M. A. 113, 1: 1 (July), 1939.

Natural Vitamins or Fortified Foods—This symposium or fortification of foods, is an absolute " must " for every reading list. Some of the highlights: " whole fresh foods properly selected can support abundant health without addition or sophistication. But . . . urban populations must subsist on foods that are neither whole nor fresh . . ." From another paper: ". . . diets of our people at their best have no great margin of safety, and a significantly large proportion of them . . . are deficient in one or more of the dietary essentials." And this from still another: ". . . we are justified in locating our public health problems in the prevention of dietary deficiency disease in that section of the population with the lowest income. . . . Actually, we are making it more difficult for them to obtain these foods for . . . the addition of vitamins to food will increase the cost." And there is a lot more.

MORGAN, A. F., *et al.* The Fortification of Foods with Vitamins and Minerals. Milbank Quart. 17, 3: 221 (July), 1939.

What You Should Know about Tuberculosis—If you will not read the whole article, you simply must read the sections headed " Well Established Facts," and " The Future." No matter what your job may be, you should know that: treatment has no influence on primary tuberculosis; children's preventoria are not justified; routine X-raying children's chests is no longer profitable; more first infection occurs in adults than in children. There is a lot more that you should know.

MYERS, A. J. The Physician and Tuberculosis. J. A. M. A. 113, 3: 189 (July 15), 1939.

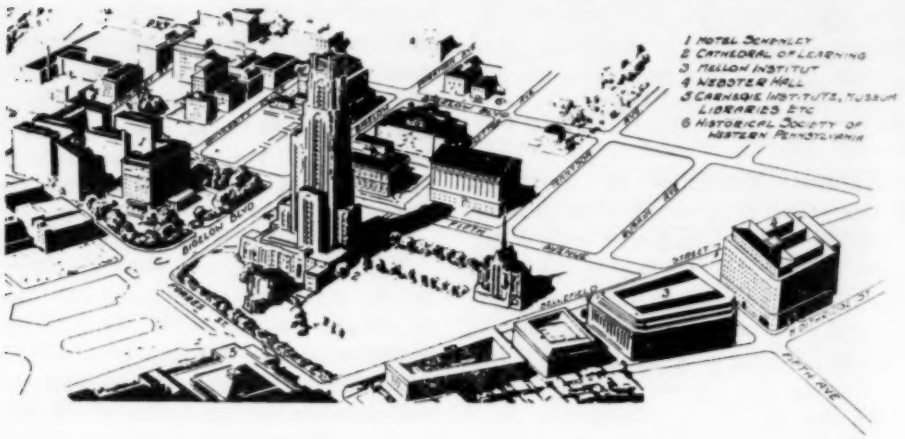
Health State of the Nation—Briefly surveying recent progress made in the several fields of the national health program through joint federal and state action, the Surgeon General welcomes the annual conference of state health officials. In the succeeding paper the principal actions of the conference are summarized.

PARRAN, T. State and Territorial Health Officers Annual Conference with the U. S. Public Health Service. Health Officer 4, 2: 56 (June), 1939.

O.T. vs. P.P.D.—Purified Protein Derivative, in the studies reported, gave evidence of greater specificity than Old Tuberculin. Health workers in the tuberculosis control field will find much of value in related findings of the study, but the above nubbin will be about enough for the rest of us to store away in the back of our several noodles.

SEIDEMAN, R. M. A Comparative Study of Old Tuberculin and the Purified Protein Derivative. Am. J. Hyg. 30, 1: 1 (July), 1939.

OAKLAND CIVIC CENTER AREA
INCLUDING
THE UNIVERSITY OF PITTSBURGH



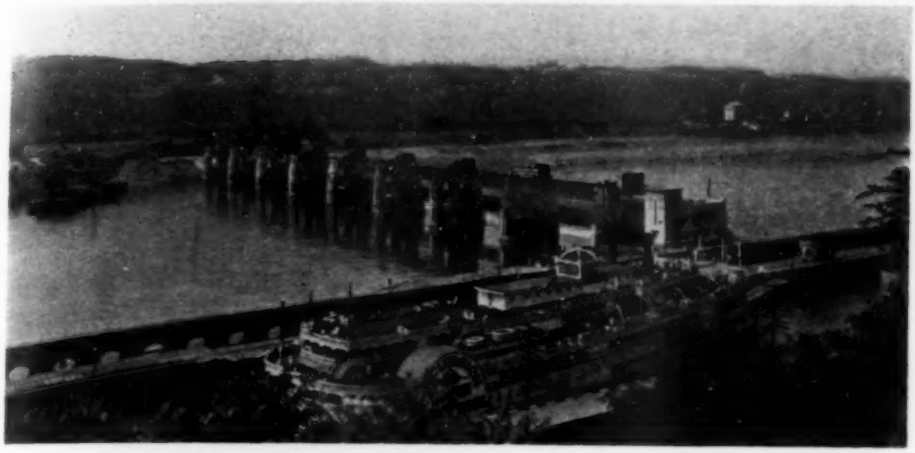
Pittsburgh's Entertainment Plans

DELEGATES to the A.P.H.A. convention in Pittsburgh who arrive early will be welcomed Sunday and Monday, October 15 and 16, by the Reception Committee and the Women's Entertainment Committee. Members of both of these groups will be available all week to give their services in helping to plan enjoyable days for the visitors, to suggest diversions and shopping tours, and to arrange for golf at Pittsburgh's private clubs.

The President's Reception will be held on Tuesday evening, and dancing will be in order immediately following the Reception.

Wednesday evening will be devoted to the dinners of the various sections. Among them will be an informal dinner held jointly by the Tri-State Food Association and the Pennsylvania Public Health Association. After the dinner the groups will join in a public meeting at which the speakers will be Arthur T. McCormick of Louisville, Ky., and Henry F. Vaughn of Detroit, Mich. The Industrial Hygiene Section is planning an elaborate program for the same evening in celebration of its twenty-fifth anniversary.

A sight-seeing trip is planned for Thursday afternoon. Visitors will be taken in buses across the Allegheny River to the North Side and then along a route which views the Home of the 57 Varieties, the new Allegheny General Hospital, the Buhl Planetarium, and the famous old Allegheny Market, now the North Side Market. The buses will then proceed to the Point Bridge and cross over the junction of the Allegheny and Monongahela Rivers to the South Side. There ascent will be made by incline to Mt. Washington for a view of Pittsburgh's Golden Triangle. The trip will continue to the Oakland



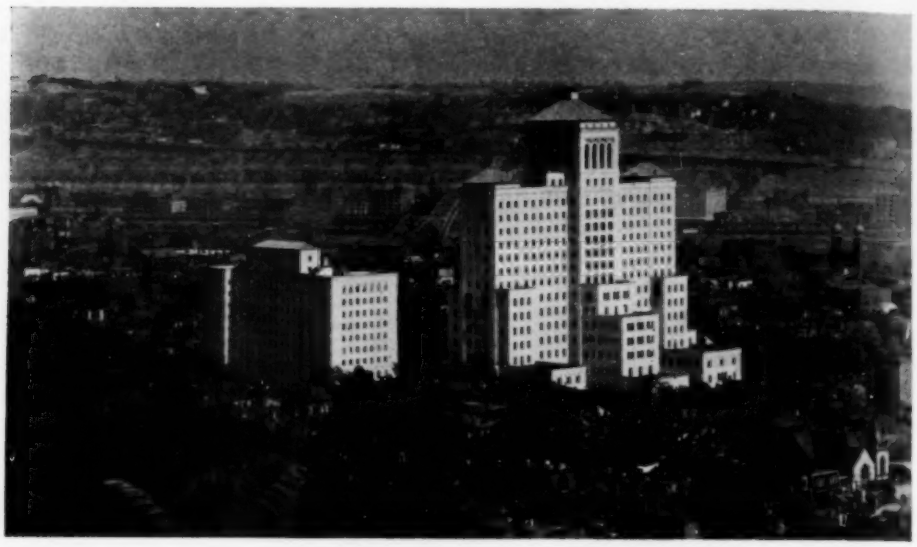
Courtesy of U. S. Army Engineers, Pittsburgh

Elmsworth, one of Pittsburgh's 25 locks and dams on the Ohio River

District for visits to the Cathedral of Learning, Foster Memorial Hall, Heinz Memorial Chapel, the Medical Center of the University of Pittsburgh, Mellon Institute, and the Carnegie Library and Art Institute where the International Art Exhibit will be open. Finally the party will go to the Hotel Schenley for tea. Later the guests will be returned to the downtown district.

Thursday evening the Banquet of the Association will be held in the Chatter-

New Lights were added to the Pittsburgh industrial night scene when Jones & Laughlin Steel Corporation opened its new $25,000,000, 96 inch continuous strip mill. Extending for more than a half mile along the Monongahela River within sight of Pittsburgh's Golden Triangle, this mill was the first for the manufacture of wide sheets and strip in the Pittsburgh District. The glare in the background is from Bessemer Converters on the other side of the river.



Allegheny General Hospital

box of the William Penn Hotel. After-dinner speeches will be limited both in length and number so that time may be preserved for the entertainment to follow. It is hoped that the guests at the Banquet will be given something of a surprise in the way of entertainment. The Medical Gridiron Club has been responsible for many good-natured ribs in the past. It is rumored that they are to be augmented by some experienced artists who will attempt to cast the light of travesty upon some of the pet foibles of the A.P.H.A.

George Westinghouse Bridge, Lincoln Highway, East Pittsburgh

TRIPS

The following schedule has been arranged by the Committee on Scientific Trips. For detailed descriptions of these tours, see the August issue of this *Journal*.

Tuesday morning:

A visit to the City Filtration Plant at Aspinwall

Tuesday afternoon:

A visit to the U. S. Bureau of Mines and an alternate trip to the Cooking Utensil Division of the Aluminum Co. of America

Wednesday morning:

A visit to the Mine Safety Appliances Company

Wednesday afternoon:

Trips to the H. J. Heinz plant and the Jones and Laughlin Steel Company

Thursday morning:

A trip to the Westinghouse Electric and Manufacturing Company in East Pittsburgh

Friday afternoon:

Groups will be shown through the new building of Mellon Institute

Allegheny Observatory located in Riverview Park

ASSOCIATION NEWS

SIXTY-EIGHTH ANNUAL MEETING
Pittsburgh, Pa., October 17–20, 1939

HEADQUARTERS — HOTEL WILLIAM PENN

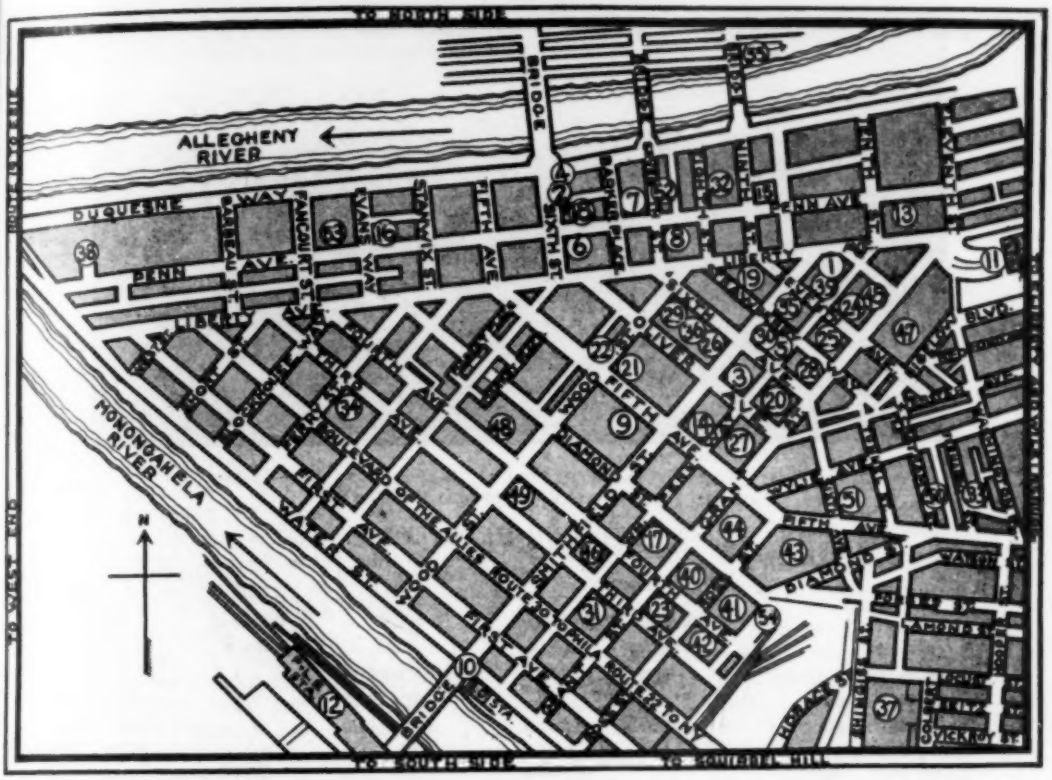
RAILROAD FARES FROM VARIOUS POINTS TO PITTSBURGH, PA.

AMERICAN PUBLIC HEALTH ASSOCIATION
OCTOBER 17–20, 1939

From	*One-way Pullman Travel*	*Round-trip Pullman Travel*	*One-way Lower*	*One-way Upper*
Atlanta, Ga.[1]	$23.75	$42.50	$5.80	$4.40
Baltimore, Md.	9.05	18.10	2.65	2.00
Boston, Mass.	20.10	40.20	4.50	3.40
Buffalo, N. Y.	7.75	15.50	2.65	2.00
Chicago, Ill.	14.10	28.20	3.15	2.40
Cleveland, Ohio	3.95	7.90	2.10	1.60
Dallas, Tex.	38.24	64.50	10.00	7.60
Denver, Colo.	45.16	74.80	10.80	8.20
Detroit, Mich.	8.85	17.70	2.65	2.00
Duluth, Minn.	27.77	48.75	6.30	4.80
Fort Worth, Tex.	38.24	65.80	10.00	7.60
Indianapolis, Ind.	11.15	22.30	3.15	2.40
Jacksonville, Fla.[2]	32.76	57.60	8.40	6.40
Kansas City, Mo.	26.90	48.90	6.30	4.80
Louisville, Ky.	12.80	25.60	3.15	2.40
Los Angeles, Calif.	79.65	118.50	19.70	15.00
Memphis, Tenn.[1]	24.20	43.40	6.30	4.80
Milwaukee, Wis.	16.65	32.05	3.15[3]	2.40
Minneapolis, Minn.	26.31	46.55	5.80	4.40
Nashville, Tenn.[1]	18.52	33.75	4.50	3.40
New Orleans, La.[1]	34.50	58.30	8.40	6.40
New York, N. Y.	13.15	26.30	3.15	2.40
Omaha, Nebr.	29.01	50.65	6.30	4.80
Philadelphia, Pa.	10.45	20.90	2.65	2.00
Portland, Ore.	78.44	118.50	19.70	15.00
Salt Lake City, Utah	58.89	87.55	13.95	10.60
San Francisco, Calif.	79.65	118.50	19.70	15.00
Seattle, Wash.	78.44	118.50	19.70	15.00
St. Louis, Mo.	18.55	37.10	4.50	3.40
Washington, D. C.	9.05	18.10	2.65	2.00
Montreal, Que.[4]	21.00	42.00	5.55	4.20
Halifax, N. S.[4]	41.95	83.90	9.30	8.00
Ottawa, Ont.[4]	20.00	40.00	5.55	4.20
Quebec, P. Q.[4]	26.65	53.30	5.55[5]	4.20
Toronto, Ont.[4]	11.50	23.00	2.65[6]	2.00
Vancouver, B. C.	78.44	118.50	19.70	15.00

1. Via Cincinnati
2. Via Washington
3. Pullman to Chicago only
4. Via Buffalo
5. Pullman to Montreal only
6. Pullman to Buffalo only

THE GOLDEN TRIANGLE
PITTSBURGH, PA.



Courtesy of This Week in Pittsburgh

SHOWN ON THE MAP

THEATERS

1—Senator
2—Alvin
4—Fulton
5—Nixon
6—Penn
7—Barry
8—Stanley
9—Warner
Art Cinema (Liberty & Eighth St.)

RAILROAD STATIONS

10—Baltimore & Ohio
11—Pennsylvania
12—Pgh. & Lake Erie
54—Fourth Ave. Station

HOTELS

13—Fort Pitt
17—Pittsburgher
18—Roosevelt
20—William Penn
Keystone, Wood Street

PRINCIPAL BUILDINGS

21—Farmers Bank
22—First National Bank
23—Grant
24—Gulf
25—Koppers
26—Oliver
27—Union Trust
55—Heinz Plant
Jenkins Arcade (Liberty & Penn)

CHURCHES

28—First Lutheran
29—First Presbyterian
30—German E. P.
31—Salvation Army
32—Second Presbyterian
33—St. Peter's
34—St. Mary's Catholic
35—Smithfield M. E.
36—Trinity

PUBLIC BUILDINGS

37—Duquesne University
38—Block House
39—Chamber of Commerce
40—City-County
41—New County
42—County Morgue
43—County Jail
44—Court House
45—Federal Reserve
46—Old U. S. Post Office
47—New U. S. Post Office
48—Pgh. Stock Exchange
49—Y.M.C.A.
50—Y.W.C.A.

"The Golden Triangle" and the "Point." The junction of the Allegheny and Monongahela Rivers to form the Ohio

PITTSBURGH HOTELS

		Single Room		*Double Room*	
Hotel	*Room Capacity*	*Without Bath*	*With Bath*	*Without Bath*	*With Bath*
William Penn Hotel	1,800		$3.50–$5.00		$5.00–$8.00
Roosevelt Hotel			2.50– 3.00		4.00– 4.50
The Pittsburgher	400		3.00– 4.00		4.50– 6.00
Hotel Schenley			3.50– 4.50		6.00– 8.00
Hotel Fort Pitt		$1.50–$2.00	2.50– 3.50	$3.00	3.50– 6.00
Hotel Webster Hall	600	$2.00	2.50– 3.50		5.00– 7.00
Hotel Keystone			2.50– 3.00		4.00– 7.00

.....(Cut off on this line and mail to the hotel of your choice).....

HOTEL RESERVATION BLANK FOR THE PITTSBURGH MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION
OCTOBER 17–20, 1939

To .....
(Name of Hotel)

Please reserve for me ..... rooms for ..... persons for the A.P.H.A. Meeting.

Single room ..... Double room .....

Maximum rate per day for room $..... Minimum rate per day for room $.....

I expect to arrive ..... If date of arrival is changed I will notify you at least 24 hours in advance.

Please acknowledge this reservation.

Name .....

Street address .....

City ..... State .....

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Thomas T. Box, M.D., Chatom, Ala., Washington County Health Officer

Paul M. Golley, M.D., La Fayette, Ga., County Health Commissioner, Walker-Catoosa District

Kalman S. von Haitinger, M.D., 417 West Buttles St., Midland, Mich., Director, Midland County Health Dept.

Carl J. Hawley, M.D., C.P.H., 302 California State Bldg., San Francisco, Calif., Medical Officer, State Dept. of Public Health

William H. Hatfield, M.D., Cor. 10th & Willow St., Vancouver, B. C., Canada, Director of Tuberculosis Control, Provincial Board of Health

Robert M. Hursh, M.D., 709 North Third St., Harrisburg, Pa., Health Officer

Walter B. Johnson, M.D., C.P.H., City Hall, Cumberland, Md., Assistant Health Officer

Robert A. G. Jones, M.D., Currituck, N. C., Assistant District Health Officer, State Board of Health

Richard Kui Chi Lee, M.D., Dr.P.H., 2663 Lowrey Ave., Honolulu, Hawaii, Deputy Health Officer and Director, Services for Crippled Children, Board of Health

Thomas D. Menser, M.D., C.P.H., Box 703, Colorado Springs, Colo., Director, City-County Health Unit

Miles D. Ridle, M.D., Shelby, Mont., Health Officer, City of Shelby and Toole County

John J. Shaw, M.D., State Dept. of Health, Harrisburg, Pa., Secretary of Health

Irving E. Simmons, M.D., C.P.H., Quincy, Fla., Director, Gadsden County Health Unit

Ralph J. Sykes, M.D., Weldon, N. C., Health Officer, Halifax County

James A. Taylor, M.D., D.P.H., Box 390, Abbotsford, B. C., Canada, Medical Health Officer, Fraser Valley Health Unit

Arthur F. Williams, M.D., 220 East Beaver Ave., Fort Morgan, Colo., Health Commissioner, City of Fort Morgan and Morgan County

Laboratory Section

Reed M. Broadbent, B.A., Iron County Hospital, Cedar City, Utah, Bacteriologist, State Board of Health

Anthony J. Lamberti, M.S., 2418 South Millick St., Philadelphia, Pa. Director, Bacteriology Laboratory, Villanova College

Mrs. Duncan R. Neilson, M.A., 2133 N.E. 13th Ave., Portland, Ore., Serologist, State Board of Health

Norman J. Pyle, V.M.D., Lederle Laboratories, 195 N. Middletown Road, Pearl River, N. Y.

Vital Statistics Section

Stuart T. Friant, Michigan Dept. of Health, Lansing, Mich., Director, Bureau of Records and Statistics

Myra E. Hilpert, A.B., 611 South Capitol Ave., Lansing, Mich., Public Health Statistician, Michigan Dept. of Health

Helen R. Parker, B.Com., 512 Linden Ave., Victoria, B. C., Canada, Statistician, Division of Vital Statistics, Provincial Board of Health

Noel R. Rawson, M.B., D.P.H., Dept. of Health and Public Welfare, Legislative Bldg., Winnipeg, Manitoba, Canada, Director of Vital Statistics

Public Health Engineering Section

John D. Faulkner, B.S., 1824 White Oak Road, Raleigh, N. C., Assistant Engineer, State Board of Health

Francis de Sales Friel, 1520 Locust, Philadelphia, Pa., Chief Engineer, Albright and Friel, Inc.

Otto L. Fritz, A.B., City Hall, Room 4, Tucson, Ariz., Chief Sanitarian, Tucson-Pima County Health Service

A. John Horn, 385–93rd St., Brooklyn, N. Y., Water and Sewage Engineer and Chemist, Pease Laboratories

Harry M. Ramsey, 610 East Washington St., Lewistown, Mont., Sanitary Inspector, Health Dept.

Byron N. Souder, M.S., Woods Hole Oceanographic Institution, Woods Hole, Mass.

Frank J. Tatum, B.S.Ed., 1310 Front Ave., Coeur d'Alene, Idaho, State Sanitarian, Division of Public Health

George Y. Zane, B.S., Board of Health, Wailuku, Maui, Hawaii, Senior Sanitary Inspector

Industrial Hygiene Section

Gennaro Basilicato, M.D., Marshall, Mich., W. K. Kellogg Foundation Fellowship

Louis B. F. Raycroft, 19th St. & Allegheny Ave., Philadelphia, Pa., Coöperating with U. S. Public Health Service on Lead Survey

Frederick W. Sands, Fidelity & Casualty Co. of New York, 80 Maiden Lane, New York, N. Y., Assistant Chemist

Food and Nutrition Section

Marie L. Matuschka, B.S., 720 K. of P. Bldg., Indianapolis, Ind., Director, Dairy Council of Indianapolis

Child Hygiene Section

Harold Jacobziner, M.D., 105 Clarke Place, New York, N. Y., School Physician, Health Dept.

Public Health Education Section

Irving Gerring, M.S.P.H., 412 Camden Court, Ann Arbor, Mich., Student, University of Michigan

F. M. Hemphill, M.Ed., State Dept. of Health, Austin, Texas, Health Education Consultant

Harry L. Liss, 535 Fifth Ave., New York, N. Y., Director, Public Health Bureau, New York State Optometric Association

Basil C. MacLean, M.D., Strong Memorial Hospital, Rochester, N. Y., Director

Jean G. McKay, M.A., 180 Claremont, Apt. 63, New York, N. Y., Instructor, Dept. of Health, San Jose State College

Public Health Nursing Section

Hazel E. Altmann, 321 North Thayer St., Ann Arbor, Mich., Student, University of Michigan

Helen Bodley, B.S., 1811–14th Ave., Greeley, Colo., District Advisory Nurse, Colorado Division of Public Health

Vesta Bowden, M.A., 304 North Commercial St., Trinidad, Colo., Public Health Nurse, Maternal and Child Health Unit

Miriam K. Christoph, B.S., C.P.H., 402 Court House, Minneapolis, Minn., Director, Hennepin County Rural Public Health Nursing Service

Ione Coyle, R.N., A.B., 145 East Idaho St., Boise, Idaho, Orthopedic Supply Nurse, Crippled Children's Service, State Division of Public Health

Eva J. Dugger, Ph.B., Westminster, Colo., Supervisor, Maternity Homes and Hospitals, State Dept. of Health

Winifred M. Mendez, R.N., 17 Taft Ave., Santurce, Puerto Rico, Instructor of Public Health Nurses, Dept. of Health

Florence J. Woods, R.N., P. O. Box 197, Seldovia, Alaska, District Public Health Nurse, Territorial Dept. of Health

Epidemiology Section

LeGrand B. Byington, M.D., C.P.H., U.S.P.H.S. Laboratory, 14th Ave. & Lake St., San Francisco, Calif., Surgeon

Robert F. Korns, M.D., C.P.H., District State Health Office, Saranac Lake, N. Y., Epidemiologist-in-Training

Eugene E. Lamoureux, M.D., State Dept. of Health, Hartford, Conn., Epidemiologist

Emma H. MacChesney, R.N., State Dept. of Health, Albany, N. Y., Consultant Nurse in Communicable Diseases

Unaffiliated

Fred P. Bestgen, M.D., Allen Rumsey Hall, Ann Arbor, Mich., Student, University of Michigan

Robert A. Downs, D.D.S., 1120 Olivia St., Ann Arbor, Mich., Student, University of Michigan

Gerhard Hartman, B.A., M.B.A., 18 East Division St., Chicago, Ill., Executive Secretary, American College of Hospital Administrators

Merl V. Seney, B.S., Box 196, Butte, Mont., with Parke Davis & Co.

Alexander Witkow, M.D., 702 Ocean View Ave., Brooklyn, N. Y.

APPLICANTS FOR FELLOWSHIP

(Additional to names published in August *Journal*)

In accordance with the By-laws of the Association, the names of applicants for Fellowship are officially published herewith. They have requested affiliation with the Sections indicated. Action by the various Section Councils, the Committee on Eligibility, and the Governing Council will take place between now and the time of the Pittsburgh Annual Meeting.

Health Officers Section

James B. Black, M.D., Dr.P.H., Director, Rutherford County Health Department, Murfreesboro, Tenn.

George A. Hays, M.D., Executive Health Officer, Flint, Mich.

Walter N. Kirkman, Chief, Division of Personnel and Accounts and Secretary, State

Board of Health, Baltimore, Md.
Winston H. Tucker, M.D., Ph.D., Commissioner of Health, Evanston, Ill.

Laboratory Section

George P. Berry, M.D., Consultant, Rochester General Hospital, Rochester, N. Y.
Meridian R. Greene, Sc.D., Instructor in Bacteriology, University of California, Los Angeles, Calif.
John F. Kessel, Ph.D., Professor of Bacteriology and Parasitology, School of Medicine, University of Southern California, Los Angeles, Calif.
Ralph S. Muckenfuss, M.D., Director, Bureau of Laboratories, Department of Health, New York, N. Y.
Leland W. Parr, Ph.D., Professor of Bacteriology, Medical School, George Washington University, Washington, D. C.
Cassandra Ritter, M.A., Bacteriologist, Water Laboratory, State Board of Health, Lawrence, Kansas

Vital Statistics Section

Willis C. Beasley, Ph.D., Psychologist, U. S. Public Health Service, Washington, D. C.
Martin B. Woodward, M.D., C.P.H., Director, Bureau of Vital Statistics, State Department of Health, Columbia, S. C.

Industrial Hygiene Section

Anna M. Baetjer, D.Sc., Associate in Physiological Hygiene, Johns Hopkins School of Hygiene and Public Health, Baltimore, Md.

Child Hygiene Section

Howard B. Mettel, M.D., Director, Bureau of Maternal and Child Health, State Board of Health, Indianapolis, Ind.

Public Health Nursing Section

Mary E. Tennant, B.Sc., Director of Nursing, International Health Division, Rockefeller Foundation, New York, N. Y.

Unaffiliated

Jack G. Baker, Chief, Bureau of Foods and Drugs, Department of Public Health, San Diego, Calif.
Charles N. Leach, M.D., C.P.H., Field Director, International Health Division, Rockefeller Foundation, New York, N. Y.

DECEASED MEMBERS

Joseph S. Caceres, Hilo, Hawaii, Elected Member 1930
P. P. Causey, M.D., Courtland, Va., Elected Member 1932
Clifford Charlock, Hilo, Hawaii, Elected Member 1920, Elected Fellow 1924
Hoyt E. Dearholt, M.D., Milwaukee, Wis., Elected Member 1910, Elected Fellow 1923
H. E. Ferguson, M.D., Toronto, Ontario, Canada, Elected Member 1923
Louis H. Fligman, M.D., Helena, Mont., Elected Member 1935
Alfred Friedlander, M.D., Cincinnati, Ohio, Elected Member 1926
Dr. Jos E. Germain, D.P.H., Rimouski, P. Q., Canada, Elected Member 1931
Drew R. Handley, M.D., Edinburg, Texas, Elected Member 1931
William F. Lunsford, M.D., Kansas City, Kansas, Elected Member 1934
John Ritchie, Malden, Mass., Elected Member 1912
Robert C. Robertson, Delhi, N. Y., Elected Member 1937
William H. Seemann, M.D., New Orleans, La., Elected Member 1933
Morris S. Wiener, D.D.S., Brooklyn, N. Y., Elected Member 1938
Adele E. Yoe, Louisville, Ky., Elected Member 1937

CORRECTION

An article by Leroy W. LaTowsky, M.D., appeared in the August *Journal*, beginning on page 912. The work reported therein was done in the Pathology Department of the University of Nebraska College of Medicine, under the direction of J. Perry Tollman, M.D., and E. L. McQuiddy, M.D., not at Dr. LaTowsky's present location — the Philadelphia General Hospital.

STANDARD METHODS FOR THE EXAMINATION OF DAIRY PRODUCTS

SEVENTH EDITION, 1939

ERRATA

Page 17 4th paragraph, line 5, should read *contain* not *deliver*.

Page 48 Legend for Fig. 14, interchange *right* and *left*. Legend for Fig. 15, last line, interchange *right* and *left*.

Page 96 line 9 of 2. Plate Method. Change to read: containing crystal violet to a final dilution of 1:700,000.

Page 115 Reaction Potato Dextrose Agar at time of pouring. Change to read: pH 3.5 ± 0.1.

Page 164 line 10. Delete: to avoid the later use of sodium carbonate. Insert: to avoid the formation of a precipitate.

Page 167 under Reagents insert: (c) Sodium carbonate solution. Dissolve 140 gm. (1.32 molar solution) of pure anhydrous sodium carbonate in distilled water and make up to 1 liter.

Page 168 line 11. Delete last sentence of second paragraph reading: Transfer 10 cc. of the filtrate, taken immediately after the filtration, into a test tube and heat in boiling water (kept boiling) for 3 minutes. Substitute: To 10 cc. of the filtrate add 2 cc. of the sodium carbonate solution, mix and heat in boiling water (kept boiling) for 2 minutes.

line 19. Delete last sentence of 4th paragraph reading: Heat 10 cc. of this filtrate in a test tube in boiling water (kept boiling) for *exactly* 3 minutes. Substitute: To 10 cc. of the filtrate add 2 cc. of the sodium carbonate solution, mix and heat in boiling water (kept boiling) for 2 minutes.

Page 169 line 22. Delete last sentence of 3rd paragraph reading: Transfer 10 cc. of the filtrate into a test tube, and place in boiling water (kept boiling) for 3 minutes. Substitute: To 10 cc. of the filtrate add 2 cc. of the sodium carbonate solution, mix and heat in boiling water (kept boiling) for 2 minutes.

Page 172 line 4, line 7, and line 2 below table: It is understood in all A.O.A.C. reports that strengths of acid, when not otherwise specified, are those of the ordinary concentrated reagents.

Page 174 line 2. Insert footnote: Recent work indicates that a phenol value of 0.05 mg. phenol per 0.5 cc. of sample generally indicates milk heated to 143° F., for 30 minutes (Gilcreas, *A.J.P.H.*, 29:158 (Feb.), 1939).

Page 176 In heading of table at the bottom of the page, interchange the words yellow and red.

Page 177 In heading of the table, interchange the words red and blue.

EMPLOYMENT SERVICE

The Employment Service will register persons qualified in the public health field without charge.

Replies to these advertisements, when keyed, should be addressed to the American Public Health Association, 50 West 50th Street, New York, N. Y., identifying clearly the key number on the envelope.

Positions Wanted

HEALTH OFFICERS

Physician, experienced in health administration of cities and states, will consider attractive opening in maternal and child health or health education. **A343**

Experienced physician, administrator, epidemiologist, and teacher, now employed, with C.P.H. from Johns Hopkins, and 14 years' public health background, will consider position. Prefers epidemiology in city or state department. Excellent references. **A355**

Physician, aged 33; M.D., Minnesota; Dr.P.H., Johns Hopkins; has served as epidemiologist in large city and director of county health unit, with 7 years' public health experience; will consider position in public health administration or epidemiology. **A432**

Physician, aged 39; M.D. and Dr.P.H., Yale University; with excellent training in medicine, pediatrics, and epidemiology, now specializing in public health education, will consider appointment in health education or administration. **A366**

Physician, M.D., University of Cincinnati; with postgraduate training in venereal disease control, Johns Hopkins; now employed, is available as venereal disease control officer. **A363**

Physician, M.D., Syracuse University; M.P.H., Harvard; postgraduate studies in bacteriology and immunology, will consider position as health officer or epidemiologist. Has served as director of county health unit, director of industrial hygiene and medical statistics and venereal disease field survey officer. **A305**

HEALTH EDUCATION

Well qualified woman in health education wishes position as health coördinator or health counselor. Has wide experience, and Ph.D. from New York University. **H236**

Young woman, Ph.D., Columbia University, splendid background of experience in health education, will consider position as director of public health education. **H294**

Young woman, M.A., Health Education, Teahers College, Columbia; with splendid international experience, seeks position as director of health education. **H369**

Young woman, experienced teacher in health education, with M.S. in Public Health and Hygiene from University of Michigan, seeks position as health coördinator. **H398**

LABORATORY

Broadly experienced laboratory director with excellent background, now employed southern state, seeks responsible position in laboratory work or teaching of bacteriology, immunology, and pathology. **L426**

Capable research worker, Ph.D., trained at University of Southern California and Pasteur Institute, seeks position directing laboratory, in research work or field investigation. Has taught bacteriology, directed state hygiene laboratory and hospital laboratories. **L315**

MISCELLANEOUS

Experienced teacher in bacteriology and public health; Ph.D., Cornell; now professor in grade A medical school, will consider teaching, executive, or administrative position. **M327**

Dentist, graduate of Temple University, with excellent postgraduate experience, desires position in administrative aspects of dental hygiene. **M352**

Engineer with good training and experience in water treatment, sewage plant operation and in research, wishes position as superintendent. Can go anywhere. **E422**

Public health engineer, B.S. in Civil and Sanitary Engineering; C.P.H., University of North Carolina; 3 years' experience with state department of health

as field supervisor during which time he was in charge of shellfish sanitation; also experienced as district sanitarian; seeks position in public health engineering field. **E430**

Physician with postgraduate studies in public health at the University of Michigan, seeks employment in public health field. Has served in the Division of Maternal and Child Health of State Department, assistant director of a state health department, and state health commissioner. **M309**

Experienced director of milk control, food and sanitation and industrial hygiene. B.S. degree and well known record directing such work in two major cities and one state. References prominent public health personalities. **M434**

Engineer with B.S. degree and drafting ability, and with U. S. Public Health Service experience in sanitation and malaria control, desires position in sanitation and general public health work. Can go anywhere. **E433**

Young woman statistician, B.S. in Education, University of Pennsylvania; M.S.P.H., University of Michigan; experienced as secretarial, research and statistical worker in school of public health, desires position in the public health field. **S431**

Situations Open

PUBLIC HEALTH PHYSICIAN — Southern rural district; physician sympathetic with missionary program preferred; woman eligible; $2,700. 90-PH, Medical Bureau, Palmolive Building, Chicago.

STUDENT HEALTH PHYSICIAN — For appointment to student health staff in exclusive junior college for women; excellent training internal medicine required; M.S. or Ph.D. in addition to M.D. desirable; woman physician considered. 91-PH, Medical Bureau, Palmolive Building, Chicago.

PUBLIC HEALTH PHYSICIAN—Young physician with good medical background, interested in obtaining public health training; salaried appointment at end of month in field; man of English, Irish, or Scotch ancestry preferred. 92-PH, Medical Bureau, Palmolive Building, Chicago.

PUBLIC HEALTH PHYSICIAN—Capable and qualified to head department of maternal and infancy work on state board; East. 94-PH, Medical Bureau, Palmolive Building, Chicago.

STUDENT HEALTH PHYSICIAN—Co-educational college having 5 full-time physicians on student health staff; college hospital has 50 beds; opportunity for advancement; $200; 9-month appointment. 93-PH, Medical Bureau, Palmolive Building, Chicago.

PUBLIC HEALTH NURSE—Interesting tuberculosis follow-up program including bedside nursing service; graduate nurse with both public health and tuberculosis experience preferred; $115–$120, plus $20 car allowance; city of 40,000; North. 95-PH, Medical Bureau, Palmolive Building, Chicago.

SCHOOL NURSE—Large state teachers' college; duties involve actual health work with students; some teaching; $900–$1,100, maintenance; 10½ month appointment. 96-PH, Medical Bureau, Palmolive Building, Chicago.

PUBLIC HEALTH NURSE — Public health nurse, for school health service; Michigan. 97-PH, Medical Bureau, Palmolive Building, Chicago.

Situations Wanted

CERTIFIED PUBLIC HEALTH NURSE—B.S. in Education; M.S. in Public Health; experience includes teaching and directorship school of nursing, public health education and research; publications on topics related to public health problems; would like college teaching appointment including opportunity to complete few remaining hours for Ph.D. 98-PH, Medical Bureau, Palmolive Building, Chicago.

HEALTH EDUCATOR—A.B., physical education; M.S., public health; Ph.D., health education; desires appointment allowing full scope for exceptional preparation and experience; would consider opportunities in community hygiene, public health education, or position as health counselor or coördinator; at present serving as director health education for national organization in large city. 99-PH, Medical Bureau, Palmolive Building, Chicago.

PUBLIC HEALTH PHYSICIAN — B.S. and M.D. degrees eastern schools; C.P.H., Johns Hopkins School of Hygiene; 5 years chief epidemiologist state department of health. 910-PH, Medical Bureau, Palmolive Building, Chicago.

BACTERIOLOGIST—B.S., M.A. and Ph.D. degrees, state university, 10 years, teaching and research, including instructorship state laboratory of hygiene; would like research appointment in public health laboratory, or university teaching connection affording unusual research opportunities. 911-PH, Medical Bureau, Palmolive Building, Chicago.

NEWS FROM THE FIELD

NEW OFFICERS OF WESTERN BRANCH, A.P.H.A.

AT its Tenth Annual Meeting held recently in Oakland, the Western Branch of the A.P.H.A. elected the following officers to serve for the ensuing year.

President—Frederick D. Stricker, M.D., Portland, Ore.
President-Elect—W. P. Shepard, M.D., San Francisco, Calif.
Vice-President—James S. Cull, M.D., Victoria, B. C., Canada
Vice-President — Edith Kuhns, Helena, Mont.
Vice-President—I. O. Church, M.D., Oakland, Calif.
Secretary—W. Ford Higby, San Francisco, Calif.
Treasurer—Guy S. Millberry, D.D.S., San Francisco, Calif.
Chairman of Executive Committee—W. L. Halverson, M.D., Pasadena, Calif.

EDUCATION OF THE PUBLIC IN HEALTH

A NEW course, designed to train school supervisors, and especially supervisors of education in health, in the important technic of educating the public concerning the protection and promotion of health will be offered at the Harvard School of Public Health beginning in September.

The course, open to college graduates and extending one or two years, has been planned in recognition of the growing realization that those who are engaged in health education work must not only understand individual health measures, but they must also know what public health is, what its aims are, and what administrative measures are used in the fulfillment of its aims. Because it is equally essential that the student understand educational technics, the Harvard Graduate School of Education will coöperate with the Harvard School of Public Health in giving this new course.

There will be no prescribed curriculum; each student will be assigned a personal program after an individual conference to determine his or her needs, in the light of prior training and experience. Credit may be granted for previous academic work in public health and in educational methods, and for experience in the field.

The training offered in this course is based on the principle that the person going into the field of health education needs first of all a basic knowledge of anatomy, physiology, and the fundamental medical sciences. He will need to know the diverse functions of health departments and how such departments are organized. The student, will, therefore, according to his individual needs, be assigned to work in the Harvard School of Public Health, in the Harvard Graduate School of Education, in the Harvard Faculty of Arts and Sciences, in Radcliffe College and in the Harvard Medical School.

NEW YORK CITY HEALTH DEPARTMENT PROPOSES WIDE EXPANSION OF SERVICES

ON August 15, Dr. John L. Rice, Commissioner of Health of New York City, submitted to the City Planning Commission a capital budget for the period 1940–1945. For the Department of Health he proposes the construction of 14 health centers and 22 substations in the various boroughs at a cost of $7,450,000. An additional request for $300,000 to complete pending projects brings the total to $7,750,000.

Before the same board, Dr. Thomas A. Gonzales, Chief Medical Examiner, asked for $500,000 for an Institute of Forensic Medicine near Bellevue Hospital to train law and medical students in the investigation of crime and the presentation of evidence in courts.

NEW HEALTH OFFICER IN MICHIGAN

THE appointment of Henry Allen Moyer, M.D., of Charlotte, Mich., as State Health Officer, succeeding Don W. Gudakunst, M.D., Dr.P.H., was effective August 1.

CHIROPRACTOR CONVICTED

IT has been reported by George C. Ruhland, M.D., Health Officer of the District of Columbia, and Secretary of the Commission on Licensure of the Healing Arts Practice Act, that on July 27, I. Moton Johnson, a local chiropractor, was convicted of practicing medicine without a license and sentenced to 60 days in jail.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY ESTABLISHES PUBLIC HEALTH ENGINEERING COURSE

THE establishment, at the Massachusetts Institute of Technology, Cambridge, Mass., of a graduate course in public health engineering has been announced by Dr. Samuel C. Prescott, Dean of Science and head of the Department of Biology and Public Health.

The course, which will begin with the opening of the school year on September 25, will lead to the degree of master of science in one year, and will be open to qualified men of outstanding scholastic attainment and professional promise who are graduates in engineering of a recognized school or college. Candidates must have had at least one year of experience with a city, county, or state department of health, the U. S. Public Health Service, or some other recognized health agency.

Professor Murray P. Horwood, of the Department of Biology and Public Health, will direct the courses in public health engineering and vital statistics, while Professor T. R. Camp, of the Department of Civil Engineering, will give the course in hydraulic and sanitary engineering and sanitary design. The courses in health department practice and industrial hygiene will be given by Professor Clair E. Turner, and the course in sanitary biology by Professor Marshall W. Jennison. Students will be required to present a satisfactory thesis dealing with some original investigation.

JOHN RITCHIE

JOHN RITCHIE, of Malden, Mass., Charter Fellow of the American Public Health Association, Health Commissioner of the City of Boston 1908–1910, died suddenly on July 22, at the age of 88. Mr. Ritchie was for 23 years in charge of the collection and distribution of news on astronomy from Harvard for the United States Government. He had one of the largest libraries in the world on conchology, and a famous collection of shells.

He was Associate Editor of the *American Journal of Public Health*, under Dr. Arthur W. Hedrich, from December, 1919, to September, 1921.

He was a fellow and one-time president of the Boston Scientific Society, a member of the Massachusetts Statistical Association, the Massachusetts Charitable Merchants Association, Malden Tuberculosis Association, Boston Malacological Society, and a fellow of the American Meteorological Society.

PERSONALS

Central States

DR. CARLE W. BEANE, of West Manchester, Ohio, has been appointed Health Commissioner of Preble County, succeeding DR. JAMES I. NISBET, of Eaton, resigned.

DR. GERALDINE M. H. CROCKER, of Granville, Ohio, has been appointed Health Commissioner of Licking County.

† Member A.P.H.A.

THOMAS E. EYRES, M.D.,† of Des Moines, Ia., the first director of the Polk County Health Unit, organized August 18, 1937, has resigned to engage in private practice.

DR. CHESTER S. HEIMLICH, of Attica, Ohio, has been appointed Health Officer of Seneca County.

DR. IRVIN B. KIEVIT, of Medina, Ohio, recently resigned as Health Commissioner of Medina County.

DR. LLOYD E. OVERHULSE, of Holgate, Ohio, has been appointed Health Commissioner of Henry County, to succeed JULIUS R. BOLLES, M.D.,† of Napoleon.

HARRY WAIN, M.D.,† formerly of Chicago, has been appointed Health Officer of Sidney and Shelby County, Ohio.

Eastern States

DR. RALPH S. BELMONT, formerly Associate Medical Officer, U. S. Veterans' Administration, West Los Angeles, Calif., has been appointed Health Officer of Sanford, Me.

DR. ROBERT E. ELLEGOOD, of Dover, Del., who has been a member of the State Board of Health for 23 years, has resigned.

ARTHUR C. JOST, M.D.,† of Dover, Del., has resigned as Executive Secretary of the State Board of Health, effective August 10.

Southern States

DR. BENJAMIN R. ALLEN, of Chatham, Va., formerly Health Officer of the Pittsylvania Valley District, has been appointed Health Officer of the Suffolk-Nansemond-Isle of Wight District, succeeding DR. THOMAS SCARLETT.

GEORGE M. ANDERSON, M.D.,† of Morgan, Ga., has been the Health Officer of the Calhoun County, Ga., Health Department. It was recently decided to dispense with this Department, for economic reasons.

JOHN B. H. BONNER, M.D.,† has been transferred as Health Officer from Prince George County to the Page-Shenandoah-Warren Health District, with headquarters at Luray, Va.

DR. PAUL W. BOWDEN, of Franklin, Va., has been appointed Health Officer of Southampton County, succeeding the late PETER P. CAUSEY, M.D.,† of Courtland.

DR. WESLEY G. BYERLY, of Statesville, N. C., has been appointed Health Officer of the Burke-Caldwell District Health Department, succeeding WARREN D. CARTER, M.D., C.P.H.,† of Morganton.

GEORGE R. CARPENTER, M.D.,† formerly of Bristol, Va., has been appointed Health Officer of Fairfax County, to succeed EDWARD M. HOLMES, JR., M.D.,† now on the staff of the State Health Department.

FRANCIS J. CLEMENTS, M.D.,† of Stony Creek, Va., has been transferred as Health Officer from Sussex County to the Sussex-Prince George Health District, with headquarters at Stony Creek.

DR. ANDREW B. COLLEY, of Tompkinsville, Ky., has been appointed Health Officer of Webster County, to succeed DR. CHARLES M. SMITH, of Dixon, resigned.

HERMAN F. EASOM, M.D.,† of Raleigh, N. C., has resigned as Director of the Division of Industrial Hygiene of the State Board of Health. He will return to the staff of the North Carolina Sanatorium for the Treatment of Tuberculosis, where he was formerly located.

WILLIAM W. FULLER, M.D.,† of Williamsburg, Va., has been appointed Director of the Peninsula Health District, to succeed JACK B. PORTERFIELD, M.D.,† who has joined the

† Member A.P.H.A.

State Health Department in Richmond.

ISBIN S. GIDDENS, M.D.,† formerly of Ray City, Ga., has been appointed Health Commissioner of Jenkins County, with headquarters in Millen, succeeding DR. GLENN J. BRIDGES, resigned.

DR. ROBERT N. GRAHAM, of Del Rio, Tex., has been appointed Health Officer of Val Verde County.

DR. LELAND J. HANCHETT, Passed Assistant Surgeon, U. S. Public Health Service, has been placed in charge of the Division of Venereal Disease Control of the Florida State Board of Health, relieving DR. LEO C. GONZALEZ, of Jacksonville, while he is taking a postgraduate course in venereal disease control and public health at Johns Hopkins University School of Hygiene and Public Health, Baltimore, Md.

DR. OLIVER W. JENKINS, of Edison, Ga., has been named Health Commissioner of Bartow County, succeeding DR. ROBERT F. YOUNG, of Cartersville, who resigned to enter general practice in Hope, Ark.

DR. DANIEL E. LITTLE, of Eufaula, Okla., has been appointed Health Superintendent of McIntosh County.

DR. JOE W. MAY, of Donna, Tex., was elected Health Officer of Hidalgo County, to succeed the late DREW R. HANDLEY, M.D.,† of Edinburg.

ALBERT B. MCCREARY, M.D.,† of Jacksonville, Fla., has been appointed Health Officer of Florida, succeeding the late WILBUR A. MCPHAUL, M.D.† Dr. McCreary has been Director of the Bureau of County and District Health Work for the State Board of Health during the past 4 years.

DR. CHARLES W. MCDONALD, of Marianna, Fla., District Health Officer, has been named Acting Health Officer, following the resignation of DR. RAYBURN N. JOYNER as Director of the Jackson County Health Department.

CHRISTOPHER L. MENGIS, M.D.,† of New Orleans, La., formerly Director of the Crippled Children's Division of the Louisiana State Board of Health, has been appointed Director of the Iberia Parish Health Unit, with headquarters at Homer, La., succeeding BERT L. STINSON, M.D.†

DR. LAILOR A. MORROGH, JR., of Arnaudville, La., has been appointed Director of the Avoyelles Parish Health Unit, succeeding the late LUCIUS W. HOLLOMAN, M.D.,† of Marksville.

JOHN C. NEALE, JR., M.D.,† of Staunton, Va., has resigned as Health Officer of Augusta County, to take charge of the Southwest District, with headquarters at Abingdon.

DR. WALDO B. NEWELL, JR., of Enid, Okla., was appointed Superintendent of Health of Garfield County, effective April 1, succeeding the late DR. WILLIAM W. GILL, of Enid.

CHARLES M. PEARCE, M.D.,† formerly State Health Commissioner of Oklahoma, has been appointed Health Officer of Lake County, Fla., succeeding DR. TERRY BIRD. His headquarters will be in Tavares.

CARL V. REYNOLDS, M.D.,† of Raleigh, N. C., has been reappointed State Health Officer for another term of 4 years. He was first appointed Acting Health Officer in November, 1934, on the death of DR. JAMES M. PARROTT, and received the regular appointment in May, 1935.

DR. CHESTER L. RILEY, of Manassas, Va., has been transferred as Health Officer from Prince William County to the Prince William-Stafford Health District, with headquarters at Manassas.

WYATT E. ROYE, M.D.,† formerly of Richmond, Va., has been assigned to the Alleghany-Botetourt District,

† Member A.P.H.A.

with offices in Covington. He is succeeding JAMES H. GORDON, M.D.,† who has resigned to take graduate work in Philadelphia.

HARRY A. SAUBERLI, M.D.,† of Sevierville, Tenn., has been appointed Health Officer of the Upper Cumberland District, to succeed FRAY O. PEARSON, M.D.,† resigned.

DR. THOMAS SCARLETT, formerly Health Officer of the Suffolk-Nansemond-Isle of Wight District, in Virginia, has been assigned to the Rockingham County Health District, with headquarters in Harrisonburg.

DR. FRANK KASH SEWELL, of Madisonville, Ky., has been appointed Health Officer of Breathitt County.

BERT L. STINSON, M.D.,† of Homer, La., has succeeded DR. WALTER W. POIMBOEUF as head of the Health Service in Claiborne Parish.

VAN C. TIPTON, M.D.,† of Austin, Tex., has been appointed Director of Public Health for San Antonio.

THOMAS B. TURNER, M.D.,† of the International Health Division of the Rockefeller Foundation, has been appointed Professor of Bacteriology at the Johns Hopkins University School of Hygiene and Public Health, Baltimore, Md. During the past 3 years Dr. Turner has been engaged in postgraduate teaching and research in syphilis at the School of Hygiene and Public Health, under the auspices of the Foundation.

VERNON A. TURNER, M.D.,† of Richlands, Va., has been appointed as Health Officer of Augusta County, succeeding JOHN C. NEALE, JR., M.D.,† resigned. Dr. Turner was formerly in charge of the Buchanan-Russell-Tazewell District.

DR. CLARENCE H. WHITE, of Newton, N. C., has resigned as Health Officer of Catawba County. Dr. White will study at Harvard University.

† Member A.P.H.A.

Western States

KATHERINE KING BAKER,† formerly employed with the New Mexico State Department of Health, is now employed as Supervisor of Nurses, City Health Department of San Antonio, Tex.

EDWARD J. DEHNE, of Kellogg, Idaho, has been appointed Health Officer of Clatsop County, Ore., succeeding LENOR S. GOERKE, M.D., C.P.H.†

DR. FRANCIS H. GAMBELL, of Willows, Calif., has been appointed Health Officer of Glenn County, succeeding DR. FRANK M. LAWSON.

LENOR S. GOERKE, M.D., C.P.H.,† of Astoria, Ore., recently Health Officer of Clatsop County, has been appointed Health Officer of Yamhill County.

HAROLD R. HENNESSY, M.D.,† has been appointed Bi-County Health Officer of Sutter and Yuba Counties, Calif. He recently completed a year of post-graduate work in Public Health at the University of California.

DR. CORNELIUS W. LANE, of Crescent City, Calif., has been named to succeed DR. WILSON STEGMAN as Health Officer of Del Norte County.

DR. FRANK I. O'NEILL, of Oroville, Calif., has resigned as Health Officer of Butte County.

DR. ALFRED C. REED, the Director of the Institute of Tropical Medicine of the University of California, has been elected a corresponding member of the Belgium Society of Tropical Medicine.

DEATHS

WILBUR A. MCPHAUL, M.D.,† State Health Officer, of Jacksonville, Fla., died August 1.

DR. WILLIAM J. MAYO, of the Mayo Clinic, Rochester, Minn., died July 28.

CONFERENCES AND DATES

American Association for the Advancement of Science. Annual Meeting —Columbus, Ohio, December 27, 1939–January 2, 1940.

American Congress of Physical Therapy. Hotel Pennsylvania, New York, N. Y. September 5–8. (Following Seminar in Physical Therapy for Physicians and Technicians, August 30–September 2.)

American Association of Railway Surgeons. Chicago, Ill. September 11–13.

American Congress on Obstetrics and Gynecology—sponsored by the American Committee on Maternal Welfare, Inc. Municipal Auditorium, Cleveland, Ohio. September 11–15.

American Public Health Association. 68th Annual Meeting. Hotel William Penn, Pittsburgh, Pa. October 17–20.

American Public Welfare Association. Round Table and Annual Meeting. Washington, D. C. December 6–10.

American Public Works Association. Pittsburgh, Pa. October 9–11.

American Roentgen Ray Society. Chicago, Ill. September 19–22.

American School Health Association. Hotel William Penn, Pittsburgh, Pa. October 16–20.

American Society of Civil Engineers—Fall Meeting. New York, N. Y., September 4–9.

American Standards Association. New York, N. Y. December 13.

American Statistical Association—Annual Meeting. Philadelphia, Pa. December 27–30.

Association of Dairy, Food and Drug Officials of the United States—43rd Annual Conference. Hartford, Conn. September 26–29.

Association of Women in Public Health. Century Club, Pittsburgh, Pa. October 16.

Biological Photographic Association—9th Annual Convention. Mellon Institute for Industrial Research, Pittsburgh, Pa. September 14–16.

California Sewage Works Association —12th Annual Fall Convention. Oakland, Calif. September 18–19.

Civil Service Assembly of the United States and Canada. San Francisco, Calif. October 16–20.

Civil Service Assembly—Western Regional Conference. San Francisco, Calif. October 17.

Colorado Public Health Association. Colorado Springs, Colo. October 3–4.

Convention for the Revision of the Pharmacopoeia of the United States. Washington, D. C. May 14, 1940.

Directors of Local Health Services Conference. Hotel Roosevelt, Pittsburgh, Pa. October 16.

Florida Public Health Association. Jacksonville, Fla. December 7–9.

Health Education Institute—American Public Health Association, Annual Meeting. Hotel William Penn, Pittsburgh, Pa. October 15–17.

Institute for the Consideration of the Blood and Blood-forming Organs. University of Wisconsin Medical School, Madison, Wis. September 4–6.

International Association for Identification. Tulsa, Okla. September 11–14.

International Association of Milk Sanitarians, Inc.—Annual Meeting. New Hotel Mayflower, Jacksonville, Fla. October 25–27.

International Cancer Congress—Third. Haddon Hall Hotel, Atlantic City, N. J. September 11–16.

International Congress of Microbiology —Third. Waldorf-Astoria Hotel New York, N. Y. September 2–9.

International Heating and Ventilating Exposition—Sixth. Under auspices of the American Society of Heating and Ventilating Engineers, and coinciding with its 46th Annual Meeting. Lakeside Hall, Cleveland, Ohio. January 22–26, 1940.

International Society of Medical Health Officers. Hotel William Penn, Pittsburgh, Pa. October 16.

Michigan Public Health Association. Grand Rapids, Mich. November 8–10.

Mississippi Public Health Association. Jackson, Miss. December 6–8.

Municipal Public Health Engineers Conference. Hotel William Penn, Pittsburgh, Pa. October 16.

National Association for Nursery Education — Biennial Meeting. Hotel Pennsylvania, New York, N. Y. October 25–28.

National Association of Housing Officials. New Orleans, La. November 22–24.

National Association of Public School Business Officials. Cincinnati, Ohio. October 16–20.

National Association of Sanitarians. Oakland, Calif. December.

National Organization for Public Health Nursing. Hotel William Penn. Pittsburgh, Pa. October 15–16.

National Pest Control Association—7th Convention. Hotel Pennsylvania, New York, N. Y. October 23–25.

National Recreation Congress — 24th. Boston, Mass. October 9–13.

National Safety Congress and Exposition—28th. Atlantic City, N. J. October 16–20.

National Society for the Prevention of Blindness. Annual Conference. Hotel Astor, New York, N. Y. October 26–28.

National Warm Air Heating and Air Conditioning Association. Cleveland, Ohio. January 22–26, 1940.

New Jersey Health and Sanitary Association — 65th Annual Meeting. Berkeley-Carteret Hotel, Asbury Park, N. J. November 24–25.

New York State Sewage Works Association. Olean House, Olean, N. Y. October 6–7.

Pan-Pacific Surgical Association—Third Congress. Honolulu, T.H. September 15–28.

Pennsylvania Public Health Association—Meeting with American Public Health Association. Hotel William Penn, Pittsburgh, Pa. October 18.

Rocky Mountain Medical Conference. Salt Lake City, Utah. September 5–7.

Southern California Public Health Association. Long Beach, Calif. January 24, 1940.

State, County, and Municipal Workers of America. New York, N. Y. September 27–30.

State Laboratory Directors Conference. Hotel William Penn, Pittsburgh, Pa. October 16.

State Sanitary Engineers Conference. Hotel William Penn, Pittsburgh, Pa. October 16–17.

Texas Public Health Association. Galveston, Tex. October 2–4.

Tri-State Food & Health Officials. Hotel William Penn, Pittsburgh, Pa. October 18.

West Virginia Public Health Association. Hotel Fairmont, Fairmont, W. Va. November 6–8.

Western Governmental Research Association. Palo Alto, Calif. October 13–15.

Canada

British Columbia Medical Association. Hotel Vancouver, Vancouver, B. C. September 18–21.

International Hospital Association. Toronto, Ont. September 19–23.

American College of Hospital Adminis-

trators. Toronto, Ont. September 24–25.

American Hospital Association. Toronto, Ont. September 25–29.

Foreign

International Conference on Sewage Works and Disposal. Glasgow, Scotland. September 12–18.

Intergovernmental Conference of American Countries on Rural Hygiene. Mexico City, Mexico. End of 1939 (postponed from November 10, 1938).

International Management Congress. Stockholm, Sweden. September 19–23, 1941.

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